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IRON TRADE REVIEW
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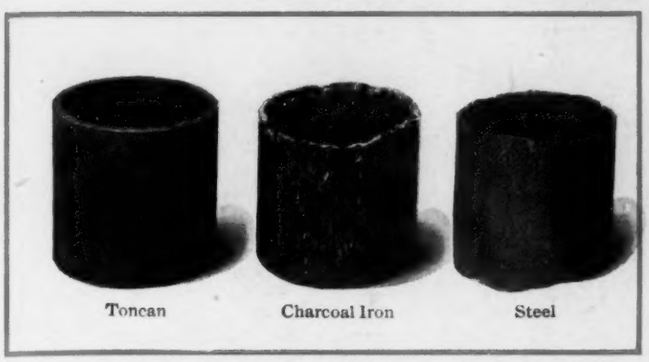
How Toncan Iron Outlasts Other Metals 4 *to* 14 Times



Toncan Copper Mo-lyb-den-um Iron tube is here compared with tubes of charcoal iron and steel in the standard 10 per cent hydrochloric acid test. At the end of two weeks the Toncan tube had lost only 3.8 per cent of its original weight, whereas the charcoal iron tube had lost 52.1 per cent and the steel tube had lost 76.4 per cent of its weight.

This photograph shows what happened to sheets of Toncan Iron, pure iron and copper-bearing steel which had been cold-worked before the test. It has been an accepted theory that cold-working accelerates corrosion by disturbing the grain structure of the metals. These tests show that this happens in other metals, but not Toncan.

REPEATED tests of Toncan Copper Mo-lyb-den-um Iron demonstrate its outstanding resistance to corrosive attack as compared with other metals. These unretouched photographs, taken after Toncan and other metals had been subjected to the standard 10 per cent Hydrochloric Acid test for two weeks, illustrate what happens when these metals are exposed to moisture and the elements, in actual service over a period of years.

The tubes of Toncan, charcoal iron and steel were the same size and gauge when this test started. Two weeks later, when this photo was taken, the charcoal iron had lost 14 times as much weight as Toncan, and the steel tube 20 times as much.

Since all sheet metal is cold-worked in fabrication, the other test was made on pieces which had been bent cold. Cold-working always has increased the rate of corrosion by disturbing the grain structure of the metal, but Toncan seems to contradict this established law. Note that the Toncan sheet is unaffected, whereas the pure iron and copper-bearing steel samples are badly attacked on both sheared and cold-worked edges.

The ability of Toncan Iron to withstand corrosive attack after severe fabrication is one of the reasons why manufacturers of stoves, refrigerators, washing machines and a host of other products are using Toncan Iron for oven linings, enameled parts and other surfaces exposed to attacks of rust and corrosion.

Write for our interesting Toncan book, "The Path to Permanence."

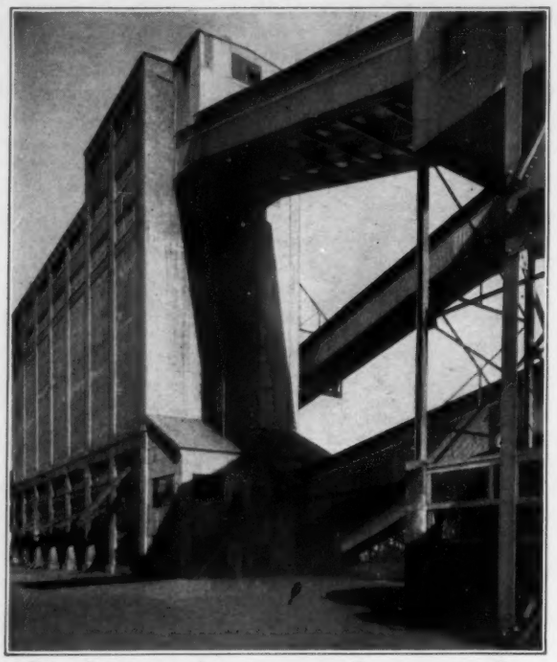
REG. U. S. PAT. OFF.
TONCAN
COPPER
Mo-lyb-den-um
IRON

CENTRAL ALLOY STEEL CORPORATION, MASSILLON, OHIO

Makers of AGATHON ALLOY STEELS

Cleveland, Syracuse, Detroit, Philadelphia, Chicago, Los Angeles, New York, Tulsa, St. Louis, Cincinnati, San Francisco, Seattle

Koppers Material Handling Plants



COKE SCREENING STATION OF THE CONSOLIDATED GAS COMPANY AT HUNT'S POINT, NEW YORK

A KOPPERS material handling system serves the Becker Type Gas Oven Plant of the Consolidated Gas Company at Hunt's Point, New York. This system prepares and delivers 1750 tons of coal per day to the ovens, and handles, sizes and screens approximately 1200 tons of coke. The screening station, an important unit in the system, separates the domestic coke into four sizes and cleans it from breeze.

In its flexibility and assured continuity of operation, this plant is typical of Koppers material handling installations in the exacting service of by-product coke and gas plants and central power stations.

The Koppers Construction Company

Designers and Builders of
BY-PRODUCT COKE AND GAS PLANTS

Chicago Pittsburgh New York

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IRON TRADE REVIEW

Cleveland, O.
Feb. 16, 1928

The Authority of Industry — National and International

What To Deduct, and When, in Income Tax Reports

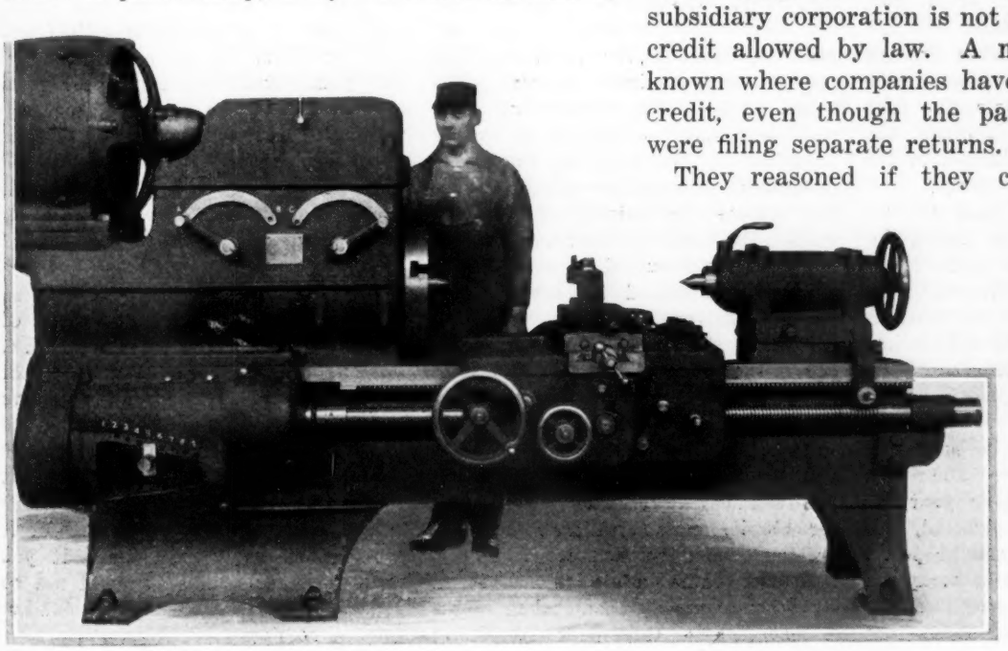
Individual Companies Allowed Credits Not Permissible in Consolidated Return—Distinction Between Obsolescence and Depreciation

By M. P. Snow

AMONG metalworking and engineering industries many consolidations have been negotiated. Some important points pertaining to income tax returns have been raised in connection with them. If one corporation owns 95 per cent or more of the outstanding stock of another, or if this percentage of stock of the two companies is owned by the same individual or partnership, or by the same individuals, partnerships or corporations in substantially the same proportion, a consolidated income tax return may be filed.

The term "stock" does not include nonvoting stock which is limited and preferred as to dividends. It will be noted such companies *"may"* file consolidated returns. They are not compelled to do so. Many of them file separate returns. Some companies have the impression that the subsidiary corporation is not entitled to the $2000 credit allowed by law. A number of cases are known where companies have failed to take this credit, even though the parent and subsidiary were filing separate returns.

They reasoned if they could take but one



THE machine has not been worn out, but has been superseded before the end of its natural life by a more efficient model. This is obsolescence, not depreciation. How does it affect the owner's tax statement?

credit of $2000 when filing together they could take but one when filing separately. This is not the case. No law, regulation, decision or ruling of any sort is known which prevents a domestic corporation from taking this credit, provided its net income does not run over the figure set for those entitled to the deduction. The credit means $270 a year to a corporation under present tax rates, and in a period of several years the saving runs into large amounts.

Taxpayers also are entitled to some other deductions which are not clearly understood. The tax return instructions tell only the elemental facts.

In the metalworking industry inventions, varying trade conditions and other factors are causing the discarding of numerous assets before the end of their natural lives. The income tax return does not explain much about this. It instructs the taxpayer to state the amount of obsolescence separately in the report and to show the basis on which it is computed. But, when may you claim obsolescence and how should it be computed?

The United States board of tax appeals has ruled helpfully on this point. It has held in one case that no amount may be charged off in any year in anticipation of obsolescence of a building which may become obsolete five to ten years later.

A certain amount of obsolescence may be claimed from the time it becomes certain that at a definite future date a building, or other property, will be obsolete. The figure representing obsolescence should be approximately the difference between the fair market value of the building as of March 1, 1913, or its cost if acquired after that date, less depreciation and the estimated salvage value. The deduction should be spread over the period from the time it is certain that obsolescence has started, and should be claimed in the returns filed for those years.

Since obsolescence is such an important deduction in the metal industry let us look at it more closely. It is somewhat different from ordinary depreciation, as this term is generally used to describe exhaustion, **wear and tear.** Obsolescence is a premature death or incapacity, or enforced disuse.

Depreciation may not be saved up over a period of years and then deducted in a certain given year for all the years it was neglected, unless a sale is made of the property, or unless the asset is to be scrapped. If it is to be scrapped ahead of the time originally expected, it is not really considered depreciation. It is called obsolescence. The asset is either out-of-date, worn out, or disabled in some way before its time. In other words, it is "obsolete." But to be able to deduct for obsolescence before the asset is actually discarded you must know the date on which it is to be discarded. The board requires that the date be known.

WHEN can I deduct? How much, and what for? These are important questions for metalworking and engineering establishments, now confronted with the problem of preparing income tax returns. Some features of the law and recent interpretations of it by the federal board of tax appeals may well be emphasized at this time. A companion article on this subject was printed in Feb. 2 issue of IRON TRADE REVIEW. The present article points out how consolidated companies are affected; and develops additional features pertaining to obsolescence of plant and equipment. The author is associated with M. P. Snow & Co., public accountants and tax consultants, Chicago.

Anticipating Obsolescence

It is not the equipment that is already obsolete that is a problem on the tax return. If you take out a machine and it is of no account you have a deduction of cost, or March 1, 1913 value, less any possible scrap value. But, how about arriving at a correct deduction for obsolescence ahead of the actual discarding?

In the article on page 313 in the Feb. 2 issue of IRON TRADE REVIEW the writer referred to a decision by the United States board of tax appeals relating to the unextinguished cost left in a replaced machine. The board said in its ruling that such cost, less any salvage, is a proper deduction in the year in which the demolition occurs. In another case the income tax administration permitted the undepreciated cost of old boilers to be deducted as a loss when they were replaced by new boilers, less any salvage value.

Neither the board of tax appeals nor the treasury department is likely to allow obsolescence on property which is not finally and actually abandoned. This does not mean that you must abandon a building before you can begin to take a deduction for obsolescence. It means that the building must be abandoned finally.

A case came before the board in which a company had taken obsolescence on a three-year remaining life. Then the company changed its plans. It did not demolish the structure as it had expected to do. The deduction for obsolescence was refused. It is on account of such situations as these that the tax bureau and the board are careful about what deductions they permit for obsolescence.

Even the income tax regulations make allowances for things which become obsolete. They provide that when change in business conditions causes the usefulness of some or all of the capital assets to be terminated suddenly, with the result that the business is discontinued or the assets discarded the taxpayer may claim as a loss for the year in which he takes such action the difference between cost, or March 1, 1913 value, and any salvage value, less any depreciation taken.

Scarcely a year passes but some new invention is made which is an improvement on the existing equipment. Obsolescence keeps step with progress. For each improvement there must be a corresponding discard.

Sifting down the truth with respect to obsolescence, you may deduct for obsolescence just as soon as it begins to occur, provided you can say with reasonable accuracy and certainty just when the obsolete asset will be scrapped.

A question which has been asked a great many times is: "How long do I have to keep my copies of tax returns, and the papers which back up my entries on the return?"

It has taken the government several years to get through the audits of the income tax records. Returns for 1917 and 1918 are open in some cases. It is best to keep such papers at least ten years. You may think your case is outlawed, and then get a letter from Uncle Sam next day. Put your return for each year in a separate folder or envelope, together with all returns pertaining thereto, and keep them. The writer would keep the papers longer than ten years. Some bit of substantiating data may be worth a great deal of money.

In filing your income tax returns get a receipt from the collector of internal revenue wherever possible. Attach the receipt to your copy of the tax return. This receipt may save you money and time later. Do the same thing wherever you file any other papers with the government. The government has a tremendous mass of records and it is natural it should make some mistakes. If you want to be sure that you will not be penalized for any of such mistakes keep a receipt.

Assembling Especially Designed Motors

Building Up Business by Solving Patrons' Problems

How Massachusetts Manufacturer Finds It Profitable To Make Analysis of Customers' Needs—Individual Study and Development Is Growing Phase of Industry

By J. B. Nealey

SURVEYING and analyzing consumers' requirements, designing and developing products suited to exacting needs, and then manufacturing and proving the products is a growing phase of industry. This assumption of research and development by the manufacturer is made possible only by a closely knit organization of business executives and engineering specialists, and one which has a large volume of business.

The history of the Holtzer-Cabot Electric Co., Boston, which specializes in electric motors and electrical signal systems, reaches back to the time when the fundamental discoveries in electrical science were first being applied in commerce. In 1875 when the business was founded the only extended use to which electricity was being put commercially was that of telegraphy, although electric current was being used to some extent for operating door bells, burglar alarms, simple annunciators and the ignition of illuminating gas.

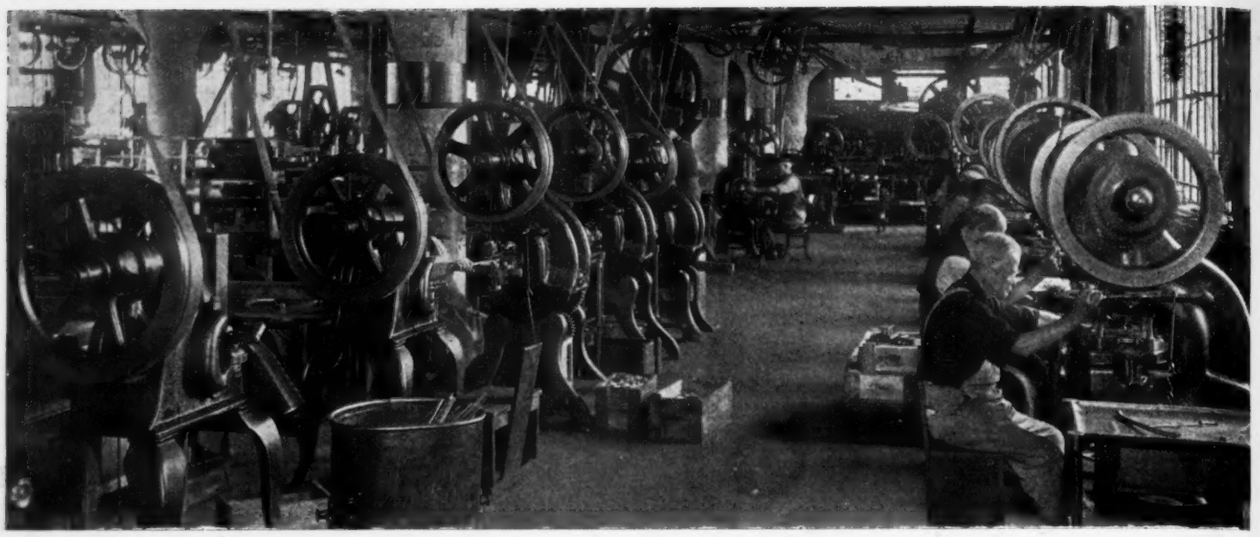
The first years of the company were devoted to an expanding group of devices. The original line of bells, alarms and annunciators soon included electric gas lighters, magneto ringers, telephones, intercommunicating systems and time clocks. When the motor lines were added, the portion of the business having to do with the former group of sundry devices was called the "sundries department" to distinguish it from the "motor department."

Gradually the company extended its activities into new fields, making devices for hospital signaling, nurses' call, fire alarms, factory calls and the like. In 1921 this branch became known as the signal department. In 1878 the company started building dynamos but it was not until the years 1890-1895 that it began to engage seriously in the manufacture of electric motors and generating units.

In 1906 when President Roosevelt sent the battleship fleet on its memorable cruise around the world, it was equipped with telephones made by the company. The telephones were then being used for the first time in directing gun fire. Since that date substantially all the battleships of the navy have been similarly equipped with these telephones. During the World war the submarines of the United States and allied nations were to a large extent provided with the company's motor generators for use in underwater communication, and its wireless motor generators were installed on many of the naval vessels, as well as the merchant vessels, used in transporting troops and supplies.

The company also makes special noiseless charging motor generators, an essential part of the equipment in all modern telephone exchanges used for charging the storage bat-

The author is identified with the American Gas association, New York.



Making metal stampings for various lines of signal and motor products

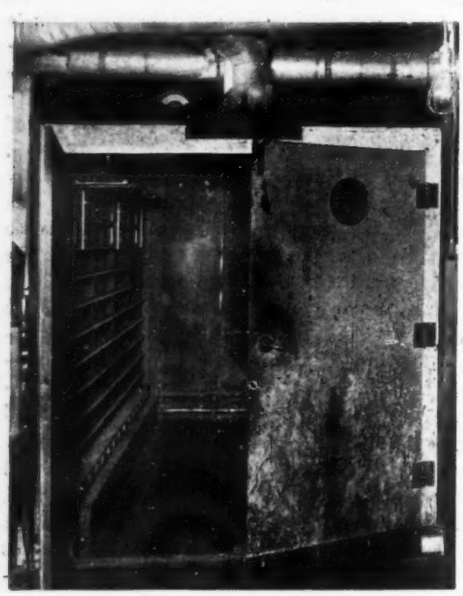
teries which supply the current operating the telephone circuit. These machines today are installed not only throughout the United States but in England, Europe, Australia, South America and other countries. At present the product of the motor department is confined largely to small motors in fractional horsepower sizes. These usually are in special forms for adaptation to automatic machines.

Practically every product put out by the company requires individual study and development. The sales force is composed of technical experts who enter the prospective buyers' plant, survey his needs and analyze his requirements. A report of the findings is submitted to the research laboratory of the electric company where application studies are made and a machine is developed and designed which will most efficiently and economically perform the work required. A model is then built and tested thoroughly in the laboratory and at the customer's plant. If found to meet all requirements it is turned over to the production engineers who make up the necessary specifications, detail and shop drawings.

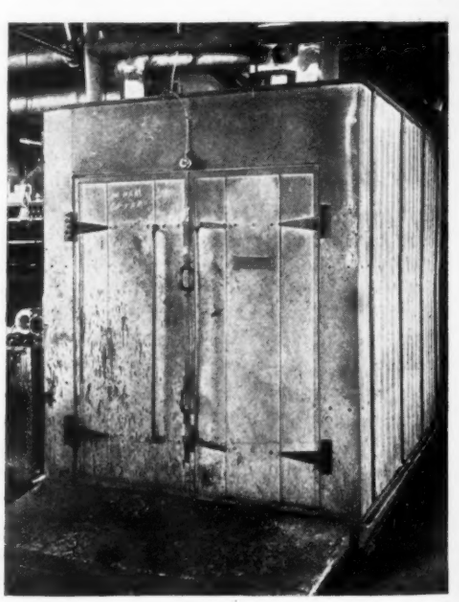
In following through the different processes in the manufacture of motor units in this plant we start with the press room on the first floor where there are located some 30 power-driven presses of various sizes. Here the heavy and light metal stamping and forming for the varied line of signal and motor products is done. Nearly 1000 different parts for special appliances are turned out in this department. A completely enclosed, gas-fired, spray washing machine and a gas heated cauldron, or universal washing kettle, are provided for cleaning parts, while gas and oxygen torches are used for brazing.

Close by is a section containing a battery of automatic screw machines and turret lathes where large quantities of special screws, bearings and similar parts are turned out daily. On another sector of this floor the stator and armature cores are made from disks punched out in the press room.

The brass castings are poured in the company's foundry in a nearby building, and are received on the fourth floor in a department equipped with turret lathes, screw machines, millers, drill presses and boring machines. Here the cast iron motor frames, end caps and other parts are drilled and machined. These parts are then moved along to the paint room for spraying or dipping. Four gas-fired ovens are used for baking the japan. These ovens are about 8 feet long, 6 feet high and 6 feet wide. Gas is supplied at line pressure and the heat is indirect. The parts are loaded on racks, fitted with trucks, running on a universal track which



GAS-fired equipment is a feature in this plant. At the left is one of the japanning ovens. At the right is an oven used for baking insulating varnish on motor windings



serves the department. Each oven has its individual track running into it and connecting with the universal track by a turntable. Two other gas-fired ovens 3 x 3 x 8 feet are used for drying lacquer.

The large motor winding department is located on the fifth floor where the winding of both the alternating and direct current machines of the larger sizes is performed. These windings are then dipped into insulating varnish and baked in an indirect heated, gas-fired oven 7 x 7 x 10 feet. Other workers provided with gas-heated lead pots solder the leads on the commutator segments by dipping directly into the molten lead.

Another and similar department is devoted to the work of winding small motors and the various coils used in the signal apparatus. This department also has its gas baking oven for its varnish work. Further along is a section devoted to assembling the commutators with mica and varnish, machining the rotors and assembling both upon shafts which have been made in another department. In this process the commutators are baked in a gas oven 3 x 3 x 4 feet to dry the mixture of mica and varnish, and then after another application of varnish they are baked for a long time at a very high temperature.

The motor assembly department is located on the third floor. Fourteen gas-fired furnaces are used in this section for soldering on leads. On the same floor are the final inspection and test departments. The experimental and development department also is located on this floor and is completely equipped, including gas-

(*Concluded on page* 447)

Split Gear Is Remodeled, in Place by Oxygen Lance

CLOSEUP VIEW OF THE LARGE SPLIT GEAR SHOWING THE FINISHED CUT

ONE Saturday morning a 23-foot diameter split gear on the hot mill train of a tin mill started to slip. A hasty inspection disclosed that the gear already was drawn up as far as possible. It would be necessary to remove metal from one section of the split hub in order to tighten the gear on the shaft. Since the gear was a part of the main drive, the mill of course would have to remain idle during the repair period. The master mechanic found that repairs would require taking the gear to the machine shop and removing ¾-inch of metal from one section of the split hub with a planer. Dismantling, handling, machine shop work, and re-erection would have required four days and would have cost an estimated $2000.

Since the mill then was operating on a 100 per cent production basis, stoppage of work on Monday, Tuesday and Wednesday would have meant a further loss to the plant of about $15,000 in profits on the material normally produced on those three days. The grand total of losses, however, would have been much greater than this because of delayed production schedules, general all-around disorganization in the normal routine of other parts of the plant, charging off the normal plant overhead for the three unproductive days, and the losses that would be occasioned by the three-day layoff to the workmen.

A service engineer reported that the excess metal could be removed by a cutting blowpipe supported by an oxygen lance. Accordingly the necessary equipment was assembled and work started about Saturday noon.

Fourteen hours labor for five men was required to do the cutting. The total cost of the work, including oxygen, acetylene, labor and steel pipe for the oxygen lance, amounted to about $110. The section cut was 3 feet 11 inches in longest length and 15½ inches was cut from the surface, the cutting blowpipe having removed altogether about 470 cubic inches of cast steel from the hub.

The cost of oxyacetylene cutting was a little over one-twentieth of the estimated cost of machining, and handling to the machine shop and back. The important factor, however, was the saving of time. The job was completed by Sunday afternoon and the gear was tightened in place and ready for operation when the whistle blew on Monday morning.

REMOVING EXCESS METAL FROM A SPLIT GEAR WITH AN OXYGEN LANCE

Output of manganese ore in India rose from 839,000 tons in 1926 to 1,015,000 tons in 1927.

Builders Form Club

Industrial Builders Association of Permanent and Sectional buildings has been formed at New York, with headquarters at Cafe Boulevard. It is open to all manufacturers of portable, sectional ready cut and similar buildings. William Buchanan, Brooklyn, N. Y., is honorary president; J. C. Cooper, Hoboken Garage Co., acting president; H. Lazarus, Anchor Corrugating Construction Co., vice president; V. Haenche, Bonafide Building Co., treasurer; Thomas F. O'Brien, 44 Murray street, New York, secretary.

Standardizes Riser Design for Steel Valve and Fittings Castings

THE constant effort to secure greater economy throughout industry has resulted among other things in the use of high pressures in steam power plant design. As late as 1915 steam pressures of 400 pounds were unusual in central station design. Now this same pressure is practically the minimum for large power plant construction, and pressures of 600 and 900 pounds per square inch are well standardized.

All of this has had a marked effect on foundry practice in connection with valves and fittings. Cast iron valves and fittings were found fairly satisfactory for steam pressure up to 250 pounds. Above this, difficulty was experienced due to porosity of the metal and lack of tensile strength. It became apparent to foundry engineers that cast steel valves and fittings would have to be used.

Same Patterns Used

At first castings were made from bessemer and open-hearth steel, the patterns used being the same as those used for cast iron. The gating and the application of shrink heads were left for the ingenuity of the molder or foundry foreman. Due to the greater shrinkage of steel, its high pouring temperature and the presence of gases in the metal which were not eliminated before the castings solidified, this practice resulted in many defects in the castings produced. In the spring of 1920 the American engineering standards committee realizing the need of new standards in the production of cast steel valves and fittings called representatives of various associations together with the result that a committee on the standardization of pipe flanges and pipe fittings was formed.

After several years of research a system of standards was adopted, and this recently has been published by the American engineering standards committee. Not only are complete dimensions for steel flange fittings listed, but other features such as physical properties and design of risers are included. These standards include 1350-pound fittings.

One of the companies active in this standardization work was the Walworth Co., Boston. This company has gone much further in its research work. Recently it has completed a series of tests of the physical properties of cast steel at temperatures ranging from 70 to 1200 degrees Fahr. From this series of tests the physical properties in steel castings necessary to withstand high temperatures and pressures were determined. However, it was an entirely different matter to secure such properties in foundry practice.

The Boston plant of the Walworth Co. is located but a short distance from the Watertown arsenal where is located one of the largest steel testing X-ray laboratories in the country. It is only natural, therefore, that the Walworth engineers should turn to this laboratory for assistance in working out their foundry practice. Examination by X-ray showed that castings made according to the best previous practice were far from uniform and showed defects of various kinds. With the X-ray analysis as a guide, various factors were altered in the subsequent experimental work, and the results of each change carefully noted.

At first the steel itself was studied. An acid electric furnace steel was used because this afforded a process which could be more closely controlled than the bessemer or open-hearth processes. Gradually the quality of steel best suited to foundry practice was determined. After this, the next step was to attack the problem of foundry technique. All phases of this branch were studied, including cores, molds, risers and sands. Here X-ray examination was of the utmost importance. Lead figures placed on the castings showed in the X-ray pictures and thus indicated the location of the various defects.

Early in this investigation it was found that the shrink heads or risers were far too small, and the engineers learned that success of steel foundry work largely depends on the proper application, location, size and shape of shrink heads. As a result of this, carefully designed shrink heads were made as integral parts of each pattern, thus insuring the use of standardized shrink heads every time the pattern is run in the foundry.

The next problem was the determination of the proper heat treatment for high pressure castings. Steel of any given analysis attains its highest quality when its chemical and molecular structure is of a certain definite nature. Steel as cast, seldom is in this desirable condition. This is due to shrinkage strains and to unequal cooling. To overcome these factors it is necessary to subject the castings to a heat treatment. There are many ways of doing this and because of the large number of variables involved the subject is one where standardization is difficult. However, it is pretty generally understood that this phase of steel foundry practice requires as careful attention as any other.

A fourth field of investigation conducted by the Walworth engineers has been that of design of the fittings themselves for best structural features. This includes working tolerances in machining as well as tests of the materials other than castings. At temperatures above 500 to 550 degrees Fahr. bronze is not suitable as a trim material, and some other material must be used. Nickel copper alloys have been satisfactorily employed and experimental work with other alloys is in progress. This development work is of interest, not only in the valve and fittings field but to the steel foundry practice as a whole.

Will Exhibit Equipment in Connecticut

Eighty exhibitors of national reputation will display equipment, including small tools, tool steels, electric equipment, platers' supplies, hardware, paints, varnish and general factory supplies, at the co-operative exhibit of Salesmen's and Purchasing Agents' Association Inc., at the Pyramid Temple Mosque, Bridgeport, Conn., Feb. 24-25.

The association is composed of buyers and sellers brought together for the purpose of better understanding each other. Considerable interest has been aroused in the exhibit and a good attendance is anticipated not only from Connecticut but adjacent territory.

Car repair shops of the Pennsylvania railroad in the Buffalo district will be moved from Gardenville to South Buffalo.

Eighth Article—Compounds and Inhibitors

URGENT demand for munitions during the war created a shortage of sulphuric acid for pickling purposes. When this situation became aggravated, substitutes were devised, one of the most common being niter cake or sodium acid sulphate, $NaHSO_4$. As sodium nitrate is the cheapest salt of nitric acid, it usually is treated according to the equation:

$$NaNO_3 + H_2SO_4 = NaHSO_4 + HNO_3.$$

The value of niter cake is that it contains some available acid content such as $(Na+)$ and $(HSO_4—)$. The acid salt is intermediate in composition between the acid itself and the normal salt. All the hydrogen of the acid is not displaced by the metal. It is named acid salt on account of its composition. Sodium hydrogen sulphate gives the irons $Na+$ and $HSO_4—$, but even in moderately dilute solution, the latter ion is further dissociated into $H+$ and $SO_4=$. It is easy to understand why this compound became a substitute for sulphuric acid when it is noted that the dissociation of the acid is,

$$H_2SO_4 = H\,(+) + HSO_4\,(—)$$

These reactions clearly show that niter cake has only half the value of sulphuric acid for pickling purposes. The product made from pyrites acid is said to be unusable for pickling because of its arsenic content, while that from brimstone acid may be employed successfully. Little, if any, niter cake is used at present for pickling.

Mention previously was made that sulphuric acid accelerates corrosion and that muriatic acid acts as an acid, but does not accelerate corrosion, in fact seems to counteract it. This is one of the reasons for adding muriatic acid to the pickle bath and salt compounds to the pickle. These salt compounds may be composed of rock salt, or rock salt and niter cake with a small amount of molasses base. The salt is to counteract the oxidizing effect of the sulphuric acid, the niter cake adds a small amount of acid content, and the molasses base acts in a small capacity as an inhibitor.

About 1920, compounds known as inhibitors gained prominence in pickling and since then activity in this field has increased rapidly. Most of the pickling compounds now on the market fall into one of three classes. First, those which form a heavy foam on the surface of the pickling solution, thereby reducing the acid fumes; second, those which do not form a foam on the pickling solution surface, but which retard the action of the acid; and third, a combination of both.

Those in the first group are designated pickling compounds. They form a foam and in addition have considerable value as an inhibitor. Those in the second group are termed inhibitors, that is, compounds which when added to the pickle bath slow down the action of the acid and as a general rule confine most of the chemical action to the removal of the scale. The third group comprises compounds which form a foam and possess the property of an inhibitor.

Some of the most important physical characteristics of the many commercial inhibitors are smell, color, powder or liquid, taste, feel, and solubility. These characteristics are much stronger in the container than in the pickling solution. The odor is important from the standpoint of the men in the shop. Some smell of molasses; others of carbolic acid.

The colors of inhibitors vary from a bright red to a dark brownish or greenish black. Most inhibitors give

THIS is the eighth of a series of articles on pickling processes written exclusively for IRON TRADE REVIEW. The first article appeared in the Oct. 27, 1927 issue. Succeeding articles will discuss fumes, ventilation and by-products; chemistry of pickling; tank design and construction; design of pickling departments, floors, drains, etc.; and, pickling for black tinning, tinning of copper and enameling. The author, Wallace G. Imhoff, is metallurgist, electric materials department, Hubbard & Co., Pittsburgh.

a light greenish yellow to an orange yellow color in the pickling solution. A few of the compounds are powders; the liquids vary from a thin to a thick, heavy, viscous, consistency. The thin liquids have the coal tar base, while the thick liquids have the molasses base.

The coal tar products bite the tongue hard; some of the molasses compounds are almost tasteless, others have a stinging taste; some of the powders taste salty; and some have an acid sour taste.

Inhibitors save acid and iron, reduce acid fumes, lessen dross production by cutting down the iron in the pickling solution, retard evaporation, reduce acid brittleness, give a better quality work by reducing or eliminating pitting and save fuel and steam. Less skilled labor in the pickling department is required, the pickling tanks do not have to be emptied so often and there is less chance of burning threaded stock when inhibitors are employed.

Pickling without an inhibitor is divided into a mechanical or physical phase, and a chemical phase. Both operate at the same time; each is essential to the operation of the other. Most steel has a light oil film on its surface from operations in fabrication. As soon as the steel is in the pickling solution action starts, slowly at first, but with ever increasing intensity. The first factor, the chemical attack of the acid, is much retarded by the film of oil on the steel. Big bubbles develop which under the magnifying glass are seen to be covered with an oil film.

This film is the cause of the bubbles being so large, since at the end of about 20 minutes when the oil has been carried off practically all the bubbles are small. These big bubbles may be compared to soap bubbles; when there is plenty of soap in the water the bubbles blow big; and the film is heavy; when there is little soap in the water, the film is thin and the bubble bursts before it reaches any considerable size. This is exactly what happens with the oil film. The first bubbles blow big and have a heavy film; the last bubbles blow small and burst easily.

If the surface is horizontal the gas bubble hangs on, and crowding into its neighbor immediately joins with it and becomes bigger. This takes place quickly in all directions until the upward pull is greater than its hold on the surface. The bubble lets go and zig-zags up to the surface but because of the surface tension of the liquid stops beneath the surface. It zig-zags back and forth a few times and then finally breaks through. When the bubbles arrive at the upper surface they possess a strong attraction for each other and join together to make big bubbles. Finally these become so large the film enclosing them is no longer strong enough to hold the pressure and they burst, thus allowing the gas to escape.

A mechanical feature of extreme importance is that the bubbles cut off a vertical surface of steel much quicker than a horizontal surface. A crack in the surface of the steel serves as a bridge and mechanically helps to make a big bubble. Threads act the same way. The film bridges over and makes a large bubble.

Oil Film Is Lacking

Large and small bubbles form at the beginning of the pickling operation. The latter rise quickly to the surface and have no oil film. The large bubbles stay "dead" on the steel at first but as the action becomes more rapid they let loose sooner. After about 20 minutes all the bubbles are small, apparently due to the lack of an oil film. The rapid rise of these countless fine bubbles to the surface and their bursting, expelling fine particles of the solution, is the direct cause of the high evaporation when no inhibitor is used. There is little surface tension and slight explosions occur. The action finally becomes strong enough to make an actual upheaval in the surface of the liquid.

What might at first be called agitation is the mechanical side of escape of the bubbles. Some of the bubbles disappear quickly, the action being increased as the temperature is raised. The amount of evaporation depends on the agitation, the escape of the gas bubbles and the surface area of the solution. The action is accelerated at the boiling point temperature.

The steel base is made up of scale, a metallic skin, and the grain structure. The proper pickling time allows the scale to be removed but not the metallic skin. The latter often is cut when no inhibitor is added. Overpickling removes the scale and the metallic skin, and, burns or pits the grain structure of the steel. The pits join and magnify the weak parts or fibers; that is, the fiber is found to be a row of pits. The whole surface becomes pitted and extremely rough; threads become sharp and ragged. The steel is burned; the fumes are exceedingly bad; more acid is used than is necessary; the solution becomes contaminated with iron salts; the action slows down considerably; and the evaporation is extreme.

A 25 per cent inhibitor based on the acid content causes no large gas bubbles. In case of the strong inhibitors the action is stopped entirely; the weaker inhibitors allow the formation of small bubbles only. If the large bubbles are made possible by the oil film without the use of an inhibitor, then it is assumed the inhibitor acts in some manner on the oil film when an inhibitor is used.

The speed of the chemical action is slower when an inhibitor is used. The weaker the inhibitor the more volume of chemical action, and the faster the speed of the action and vice versa. With either a strong or weak inhibitor practically all the chemical action gives small gas bubbles from the start. On articles such as bolts the action is confined largely to the threads and the head.

Furthermore, the use of an inhibitor prevents choking acid fumes.

Another feature is that an inhibitor stops evaporation to a high degree. For example a test without an inhibitor showed an evaporation loss of 40 per cent; the same test with an inhibitor showed a loss of only 25 per cent. Still another test under identically the same conditions showed only 20 per cent loss by evaporation. This exemplifies a considerable saving in steam, water and fuel.

The fifth fact of importance and difference when an inhibitor is used, is that the chemical action stops when the scale has been removed. The metallic skin is not touched unless the material is left in the pickle too long. The accepted reason for this is that the chemical action,

$$Fe + H_2SO_4 = FeSO_4 + H_2,$$

is prohibited by stopping the generation or absorption of hydrogen, or the interacting as soon as it is formed. If the scale is Fe_3O_4 then the action is,

$$Fe_3O_4 + 4H_2SO_4 = Fe_2(SO_4)_3 + FeSO_4 + 4H_2O.$$

If the scale is rust or soft, light, annealing scale the action is,

$$Fe_2O_3 + 3H_2SO_4 = Fe_2(SO_4)_3 + 3H_2O$$

In both these cases no hydrogen is formed. The surface of the steel is smooth and in perfect condition. The value of the inhibitor therefore is found in stopping entirely, or limiting the action of the acid on the steel which generates hydrogen.

A plausible explanation of the action of inhibitors is that since there is practically no big gas bubbles the inhibitor evidently removes, dissolves, or absorbs the oil which furnishes a film or skin for the big bubbles. Oil and grease usually are found on the

sides of the tank at the surface level showing it has been removed and comes to the surface. Next, the strong, heavy, surface tension at the surface of the solution and perhaps through it, exceeds the pressure of hydrogen gas developed by the action of the acid on the steel. The chemical action requires first, the action of the acid on the steel; and second, that the pressure of hydrogen gas formed be high enough to allow it to form a bubble. If this gas pressure is not sufficient to part the liquid and allow room for the bubble to form then the action must stop due to lack of pressure great enough to make room for itself. Any compound which can produce this condition in the liquid, will stop the chemical action on the steel, for the back pressure is higher than the gas pressure due to the chemical action.

Chemical Action Continues

This theory apparently is sound because when the strength of the inhibitor is reduced, a place finally is reached where the gas pressure is high enough to make room for itself and keep the chemical action going forward. The gas is carried upward making room for another gas bubble and so by this mechanical means of removing the gas as soon as it is formed, the chemical reaction is continued. When the inhibitor is weak the gas pressure easily overcomes the back pressure, or liquid pressure, or surface tension on the bolt surface, and the action is violent; when the inhibitor is strong, the back pressure, or surface tension on the bolt is greater than the gas pressure due to chemical action and the action practically is stopped. When the chemical reaction takes place on the scale alone, no hydrogen gas is formed. This explains why inhibitors stop acid fumes.

Since inhibitors stop the action of the acid on the iron, a sixth factor of great importance is the saving in acid. This saving frequently amounts to 25 per cent and represents an important figure when large tonnages and surface area are pickled.

A seventh feature is the reduction in the amount of iron which goes into solution; this is a vital factor in dross production. It also means that the tanks have to be emptied less often thus saving the good acid which is otherwise discarded when the tanks are drained and cleaned.

The eighth factor of importance is the improvement in the pickling room atmosphere. The choking, obnoxious, acid fumes and steam are reduced and in some cases almost eliminated entirely. This is a distinct advantage in raising the efficiency of the shop, besides overcoming the feature of destruction of the clothes of the picklers by the acid fumes.

The ninth feature is that the steel is not easily burned. This factor is of great importance in pickling threaded machine bolts, etc. When an inhibitor is used the scale is pickled off, and the threads are left in perfect condition. Less skilled pickling labor therefore can be employed. When the steel is pickled the action stops, unless the material is left in the acid longer than is necessary to secure uniform results.

The tenth factor of importance is the elimination of hydrogen gas and the burning and pitting of the steel which has a tendency to eliminate entirely, or reduce acid brittleness in the steel. Acid brittleness becomes a serious trouble to overcome in pickling wire.

The eleventh feature of improvement is the better pickle control. With less evaporation, less water added and less adding new acid, there is a smaller variation in the condition of the pickling bath. This means also more uniformity of acid strength and more uniform pickling time.

The twelfth feature of improvement is the increased life of the buildings and equipment. Acid fumes are destructive to steel buildings, steel girders, steel windows, etc. The use of an inhibitor greatly reduces this corrosion.

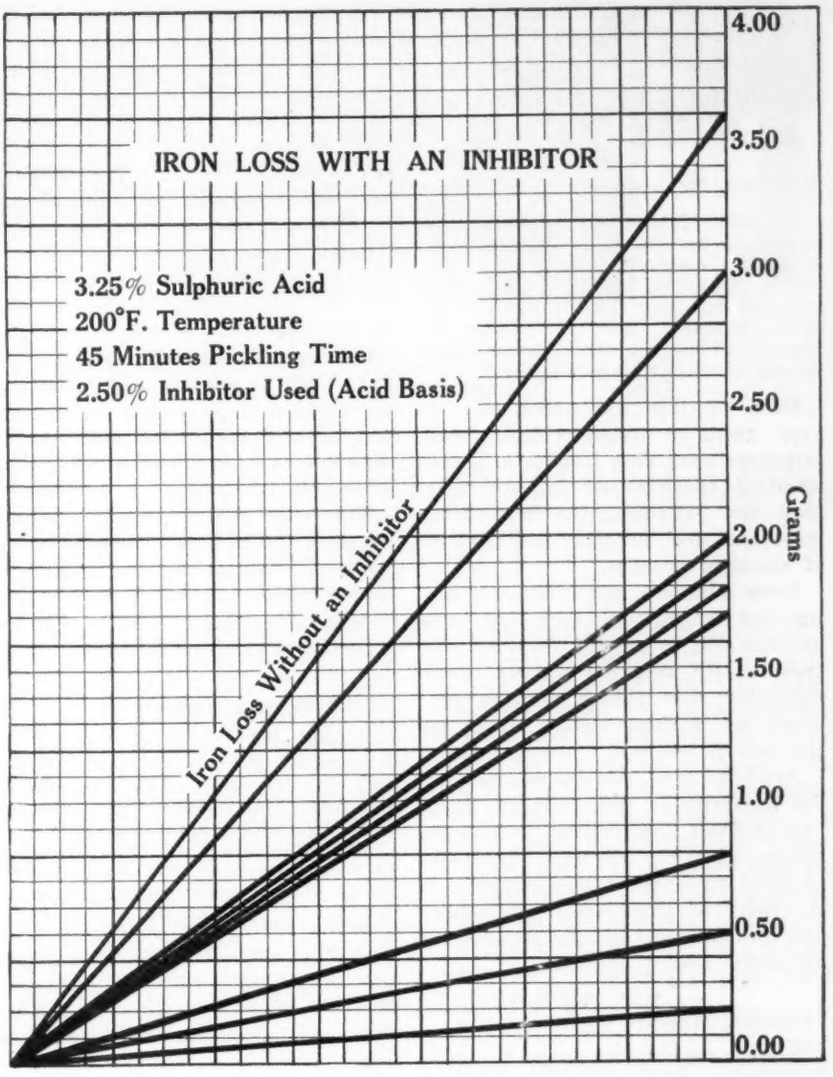
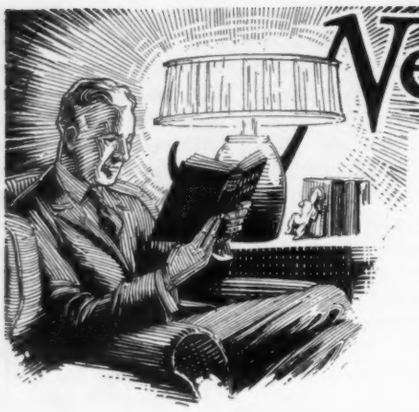


FIG. 23—GRAPH SHOWING THE IRON LOSS WITH AND WITHOUT THE USE OF AN INHIBITOR

The actual practical value of using an inhibitor in the pickling solution is best illustrated in Fig. 23. The iron loss is shown at the right. The pickling time was 45 minutes; the acid strength was 3.25 per cent; the temperature was 200 degrees Fahr.; and the percentage inhibitor used was 2.50, based on the acid content of the solution. Each line represents an inhibitor. The highest line shows the iron loss without the use of an inhibitor for comparison.



New Books Worth Reading

Standards for Steel Building

Standard Handbook of Steel Construction, by the American Institute of Steel Construction Inc.; cloth, 384 pages; published by the institute and supplied by IRON TRADE REVIEW for $1.50, postpaid, and in Europe by Penton Publishing Co. Ltd., Caxton House, London, for 7s 6d, net.

Data in this publication are of great value to designers and specification writers. They include A. I. S. C. standard specifications for structural steel for buildings, for fireproofing structural steel buildings and the code of standard practice.

Much additional information is also included which previously has been unobtainable in printed form or only from widely scattered sources. Data regarding new shapes recently produced by various rolling mills are complete to the date of issue.

Availability of this information under authority of the American Institute of Steel Construction, in a single volume, gives the industry a handbook of great value and brings concisely to the hand of those interested almost everything needed by the designer of structural steel fabrications.

* * *

Protection Against Corrosion

Protective Metallic Coatings, by Henry S. Rawdon; cloth, 277 pages, 6 x 9 inches; published by Chemical Catalog Co. Inc., New York, and supplied by IRON TRADE REVIEW, for $5.50, postpaid, and in Europe by Penton Publishing Co. Ltd., Caxton House, London, for 27s 6d, net.

Through an arrangement with the Interallied Conference of Pure and Applied Chemistry the American Chemical society was to undertake the production and publication of scientific and technologic monographs on chemical subjects. This is an attempt to found an American chemical literature without primary regard to commercial considerations. Two purposes are aimed at: To present the available knowledge upon the chosen subject in a readable form, intelligible to those whose activities may be along a wholly different line; and to promote research in the branch of science covered, by furnishing a well digested survey of progress already made and indicating directions in which investigation needs to be extended.

In the present volume protective metallic coatings as a means for mitigating corrosion of iron and steel has furnished the text, as the most important application. The characteristics and properties of the various metallic coatings are discussed, to determine their usefulness as well as their limitations. This is phrased for the non-technical reader as well as the specialist in metallurgy and chemistry. No attempt has been made to include the working details of various methods of producing the coatings and the volume in no way can be regarded as a shop manual on coating processes.

The work covers coating methods, coatings, testing methods, and bibliography. Coatings include, zinc, tin, copper, nickel, chromium, cobalt, lead, cadmium, aluminum, gold, silver and miscellaneous materials.

* * *

Electricity in a Nutshell

Electrical Pocket Book, 1928 by the *Mechanical World;* cloth, 326 pages, 4x6 inches; published by Emmott & Co., Ltd., Manchester, Eng., and supplied by IRON TRADE REVIEW at 75 cents postpaid, and in Europe by Penton Publishing Co. Ltd., Caxton House, London, for 1s 9d, postpaid.

In its twenty-first year of publication this handbook follows the general line of previous editions, with additions to bring it to date. An added feature is a section devoted to electrical calculations. with illustrative problems and solutions. Estimating for wiremen and use of electricity in textile mills are also treated in detail. A large section is devoted to engineering data tables for general use.

* * *

Nature's Mineral Largess

Mineral Resources of the United States, 1924; Part 1, Metals, 589 pages, 6x9 inches; Part II, Nonmetals, 728 pages; cloth, published by the bureau of mines, department of commerce; supplied by IRON TRADE REVIEW for $1 for each volume, and in Europe by Penton Publishing Co. Ltd., Caxton House, London for 5s each, net.

Uniform with previous publications under the same title, these volumes cover the situation in the United States in 1924. The volumes contain monographs on various metals and other mineral substances, each by an expert in the subject. An introduction and a tabular summary give a general view and numerous tables present detailed information. Production, imports and exports and stocks are presented, and comparisons made with previous years.

An interesting feature is a series of tables showing the mineral production of each state. Iron ore, pig iron, steel, coal, coke, petroleum are covered in much detail. An earlier publicity for these figures would give them much greater value to those who have occasion to refer to them.

* * *

Authority on Material Testing

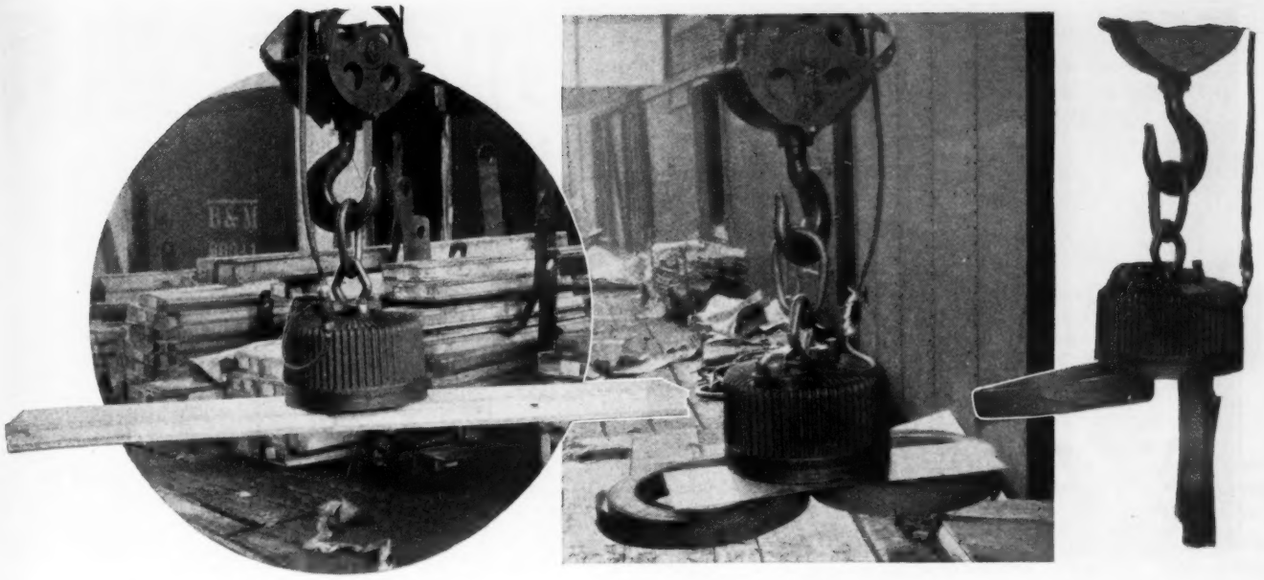
A. S. T. M. Proceedings, 1927, by the American Society for Testing Materials; paper, cloth and half-leather, Part I, 1142 pages; Part II, 564 pages, 6 x 9 inches; published by the society and supplied by IRON TRADE REVIEW for $6 in paper, $6.50 in cloth and $8 in half-leather, and in Europe by Penton Publishing Co. Ltd., Caxton House, London, for 30s, 32s, 6d and 40s, respectively, net.

The volume covers proceedings of the society for 1927 and is in two parts. Part I contains the annual reports of 44 standing committees and four joint committees. It presents 88 tentative standards which have been revised or are published for the first time, the annual address of the president and the annual report of the executive committee.

Part II contains 33 technical papers and discussion. These present valuable information on results of investigations by experts in the field of engineering materials, including fatigue of metals, effect of temperature on the properties of metals and a symposium on the field control of the quality of concrete. Many other papers are included.

Nevada Leads in Wealth

Nevada with less than 80,000 inhabitants leads the states in per capita wealth with $7299. New York, with one-tenth of the country's population and wealth estimated at $40,-109,000,000, ranks fourteenth with a per capita average of $3593. The average for Pennsylvania is $3389, for Ohio, $3233, and for Illinois $3385. These statistics are compiled by the national industrial conference board, New York, on the basis of estimates for 1925.



(Left)—Magnet lifting a box of strip steel weighing 600 pounds. (Center)—Picking up two coils of strip steel, with a thin sheet of steel between the coils and the magnet. (Right)—When the sheet of steel is not used, the coils have a tendency to fall away from the magnet as shown

LIFTING MAGNET FACILITATES HANDLING OF STRIP STEEL COILS

COILED strip steel is difficult material to handle, for unless the coils are tightly bound together they will pull apart and cause confusion to the handlers and damage to the steel. A strip steel coil, even though securely bound, is a heavy, awkward thing to handle and the moving of any amount of this steel requires a gang of husky men who must be cautioned continually against battering the material.

The Superior Steel Corp., Carnegie, Pa., whose product is largely hot and cold-rolled strip that is shipped both in coils and boxed flat, has adopted lifting magnets for handling its finished steel, using manual labor only where necessary to move the bundles or boxes into closed freight cars. At this plant 200,000 pounds of strip steel recently was loaded into box cars with the magnet and four men during a ten-hour shift. Before the magnet was purchased, the most that six men could load was 140,000 pounds in a ten-hour shift.

The magnets, which were manufactured and installed by the Electric Controller & Mfg. Co., Cleveland, usually handle two coils at a time and if these two coils are not placed tightly up against each other, one or both of the coils has a tendency to fall away from the magnet and be held in a vertical position. Because the steel must not be battered, it is not satisfactory for the coils to be dropped on their edge. In experimenting with the magnets on this job of handling coiled strip steel, the Superior Steel Corp. discovered that a thin sheet of steel placed over the two coils to be lifted would spread the flux from the magnet sufficiently to hold both coils flat against the plate. It is a peculiar fact that this plate does not short circuit the flux but causes the magnet to do a better job than without the plate.

The fact that much of the strip steel is boxed flat, does not interfere with its being handled by the lifting magnet, as shown in the photograph of the lifting magnet moving a long box of strip steel. This particular package weighed a little over 600 pounds but this same magnet is handling packages that run as high as 1000 pounds.

Solving Patrons' Problems

(Concluded from Page 441)

fired forging and heat treating units.

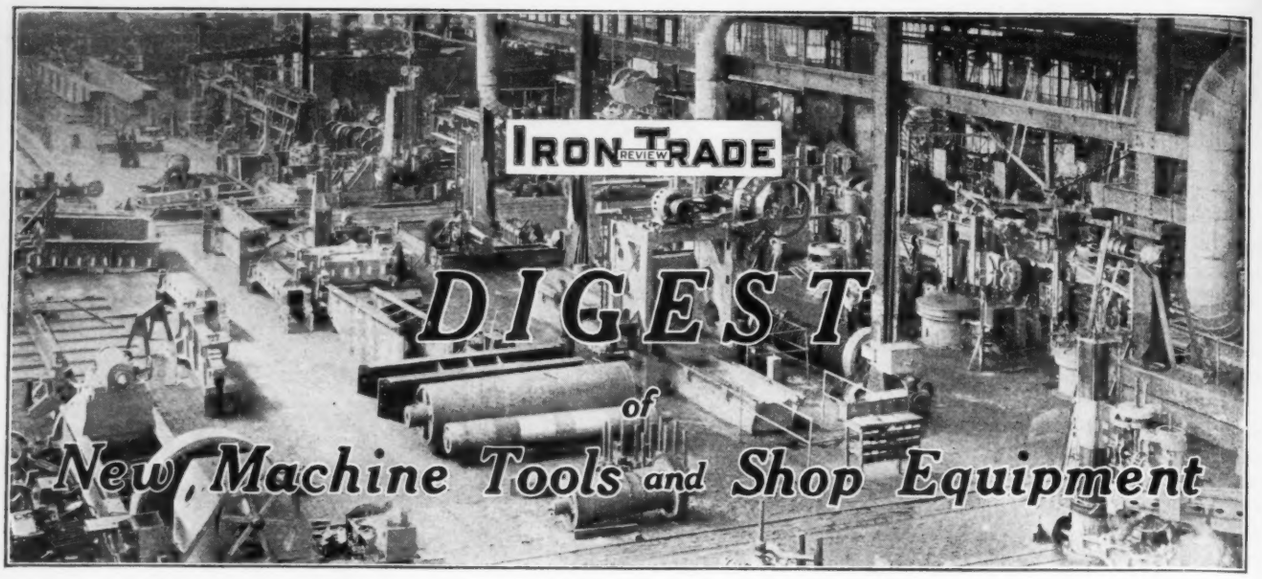
A complete machine shop for making special tools and dies used in the various manufacturing process is maintained on the fourth floor. This is served by three gas-fired, tool hardening furnaces, oxygen-gas brazing torches and gas soldering ovens.

Another machine shop is located on the sixth floor and is devoted to the drilling and tapping of the smaller parts for signal and motor products. Another section is devoted to the assembly of the signal products, while nearby are the testing and inspection departments for these parts. Also on this floor is the finishing department equipped with plating tanks and polishing wheels, while in one corner, partitioned off from the rest of the room, is a section where the finished parts are lacquered and then baked in a gas-heated oven.

Plan Metal Arts Museum

A metal arts museum and historical library tracing the art of metalworking, to be known as the John Woodman Higgins Armory Inc., will be established at Worcester, Mass. John W. Higgins, president and treasurer, Worcester Pressed Steel Co., is sponsor. Other incorporators are Paul B. Morgan, Aldus C. Higgins, Harry G. Stoddard, Edward T. Esty, Mrs. Clara C. Higgins and Mrs. Katherine H. Riley, all of Worcester, and Mrs. Olive H. Prouty, of Brookline, Mass.

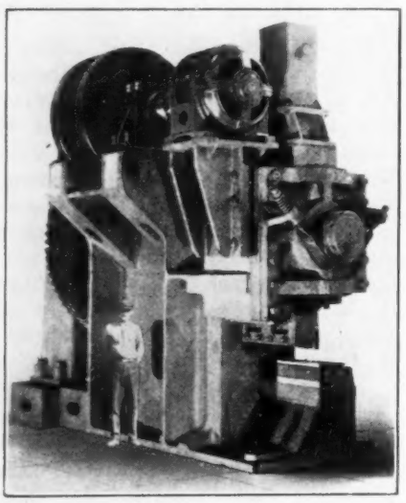
The Pennsylvania railroad retired 559 wooden cars from service in 1927. This leaves only 200 wooden passenger cars in service, for emergency use only.



Heavy-Duty Shear Given Many Improvements

No. 44

Mackintosh-Hemphill Co., Pittsburgh, recently built an improved type of open-throat shear of large capacity, capable of cutting 4½-inch square or 5-inch round cold alloy steel. This shear, shown in the accompanying illustration, weighs about 225,000 pounds and has a knife pressure of 1,400,000 pounds. Its total height measures about 16 feet and the weight of the shear frame alone is over 40 tons. It is operated by a 125-horsepower motor located on top of the frame, making about 15 cuts per minute, the stroke being 6½ inches. The pinion shaft is provided with two 63-inch flywheels spaced symmetrically on the shaft which equalizes the load on the motor shaft bearings. The shear is provided with an air-operated jaw clutch mounted on top of the frame. The top knife block is balanced by means of a double spring at the top of the shear which is easily accessible for adjustments or replacements. An automatic band brake insures the stopping of the top knife block in the upper position. Ample lubrication is supplied to all parts.



No. 44—Large open-throat shear

Simple Calculator Based on Trigonometry

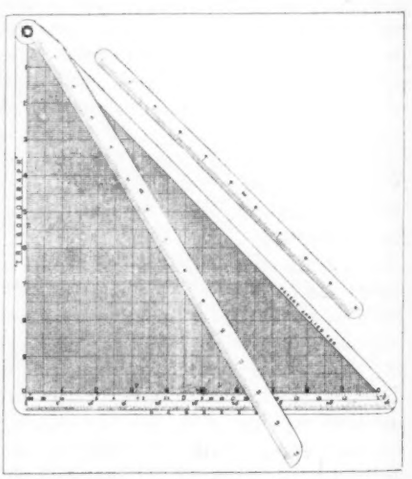
No. 45

J. S. Ronay, 303 Plymouth building, Cleveland, has developed a new graphic trigonometric calculator to provide a simple means of calculation. Slide rules or scale calculators invariably are based on logarithms, therefore their scale units continuously vary. Most people use the slide rule to solve only multiplication and division because they find the trigonometry scales difficult to handle. In the new calculator, the base units are decimals making them uniform length and thereby simple to read. The base is a 45-degree right triangle which is divided in both directions into ten equal parts and subdivided decimally. At the apex of this base triangle is pivoted a movable hypotenuse which has decimal unit scales identical with the base. With the device, it is possible to read at one setting all functions of an angle. It solves all trigonometric problems. To solve oblique triangles, an auxiliary scale is provided which completes the third side of the angle. Since the calculator is based on trigonometric functions, obviously all proportional calculations can be performed—multiplication, division, stresses in framed structures, moments, friction losses and many other problems. The calculator is made from transparent celluloid.

Offers Two Sizes in New Milling Machines

No. 46

Kearney & Trecker Corp., Milwaukee, now is offering in two distinct sizes and in six varying lengths of table travel and bed the line of production milling machines announced recently. The smaller machine is similar to the original size, having a 14-inch wide table and being built in the simplex and duplex types. The larger machine is new, having a wider and heavier bed equipped with a 22-inch wide table in both the simplex and duplex types. In addition each machine is offered with a table range of 3,4,5,7,9, or 11 feet, giving a total of 24 separate models to choose from. The length of bed under the table in each series ranges from 4 to 16 feet, depending on the table length. In no case does the overhang of the table in extreme positions exceed the allowable maximum, which is figured on a conservative basis. The operating



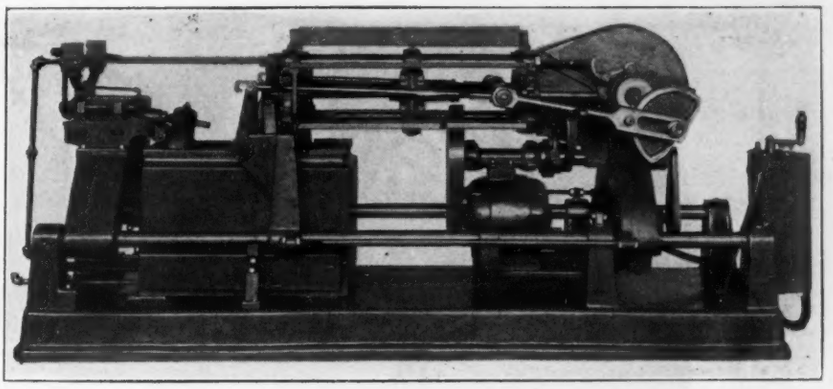
No. 45—Trigonometric calculator

features are identical in both series, and the same unit plan construction is carried out whereby any model may be equipped with standard units to accommodate the productive requirements of the user.

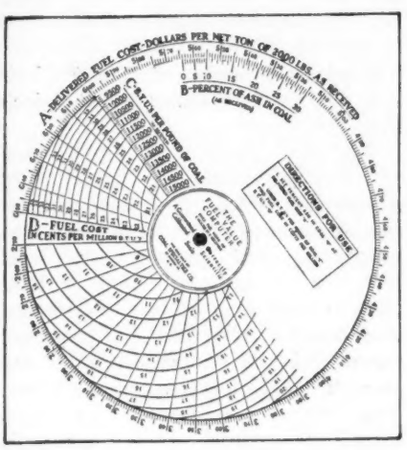
Introduces Die Casting Machine on Market

No. 47

The Madison-Kipp Corp., Madison, Wis., recently announced a new die casting machine and a complete service for design and construction of dies. The machine shown in the illustration, was developed several years ago solely for the company's own use and now for the first time is placed on the market. It is a one-man machine. Operation is completely automatic with safety features covering movement of the metal, movement of the die and movement of the cores. The operator's duties are to operate the single clutch lever, supply new metal, clean and oil the die with an air hose and watch the castings. The machine can be stopped with the die in any position and reversed from any position. The standard zinc base and aluminum base alloys may be used in the machine. Four, 6, 8, or 12 shots can be made per minute, a 2-horsepower multispeed motor providing the power. The machine is equipped with a fire-brick lined cast-iron furnace and a cast-iron pot which can be removed from the furnace compartment.



No. 47—Improved type of die casting machine


A-DELIVERED FUEL COST-DOLLARS PER NET TON OF 2000 LBS. AS RECEIVED
B-PERCENT OF ASH IN COAL
C-B.T.U.'S PER POUND OF COAL
D-FUEL COST IN CENTS PER MILLION B.T.U.'S
DIRECTIONS FOR USE

No. 48—Coal fuel value calculator

Device Calculates Fuel Value in Coals

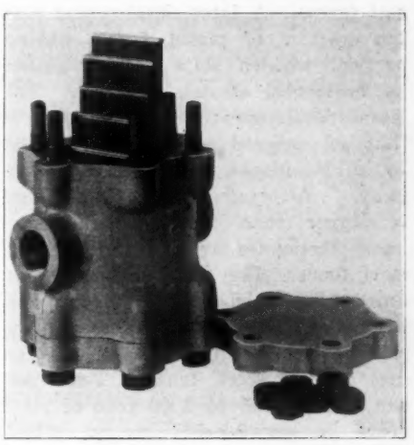
No. 48

The Coal Specialties Co., 50 Church street, New York, has developed an instrument which provides a means of evaluating different coals as to their steam raising abilities. This fuel value computer can be used by both coal sellers and buyers and is made of heavy pyralin printed in red and black. It is 9⅜ x 11⅝ inches. The three variable factors in computing the comparative values of coals, both bituminous and anthracite, are: (1) The delivered cost per ton; (2) the percentage of ash; and (3) the B.t.u. content. With one setting of the rider of the computer, the user can determine the cost in cents of a million recoverable B.t.u.'s.

Pipe Line Purifier Made in Smaller Size

No. 49

Blaw-Knox Co., Pittsburgh, is introducing as a product of its subsidiary, the Andrews-Bradshaw Co., a smaller size of purifier for use in several sizes of air, steam, or gas lines up to 3-inch. In saturated steam lines it is claimed to remove all moisture from the steam, delivering standard specification steam free from all solids, both soluble and insoluble. The device which is shown in the illustration, may also be used in steam lines to gas producers to maintain a more uniform hydrogen content in the gas; in the steam lines leading to the tar burners on open-hearth furnaces, where completely dried steam effects a three-fold purpose—it produces a shorter, hotter, more uniform flame, saves about a gallon of tar per ton of steel and keeps the checker chambers cleaner. This purifier placed in the air line close to pneumatic tools cleans air for several tools.



No. 49—Purifier for pipe lines

Iron Trade Review's Calendar of New Equipment

No.	Item	Builder	Comment	Date Described
39.	Bitumen spray gun	Quigley Furnace Specialties Co.	For applying protective coatings	Feb. 9
40.	Split-phase motor	Wagner Electric Corp.	Improved design featuring new type switch	Feb. 9
41.	Fin tube core	Wolverine Tube Co.	For fan system heating units	Feb. 9
42.	Recording meter	Esterline-Angus Co.	Records time and duration of events	Feb. 9
43.	Sheet flattener	Sutton Engineering Co.	Eliminates crosswise dish	Feb. 9
44.	Open-throat shear	Mackintosh-Hemphill Co.	Improved-type, large capacity	Feb. 16
45.	Trigonometric calculator	J. S. Ronay	Simple means for calculating	Feb. 16
46.	Milling machines	Kearney & Trecker Corp.	New sizes of recent model	Feb. 16
47.	Die casting machine	Madison-Kipp Corp.	Improved-type, automatic	Feb. 16
48.	Fuel value calculator	Coal Specialties Co.	Computes fuel value of coal	Feb. 16
49.	Pipe line purifier	Blaw-Knox Co.	Removes moisture and solids	Feb. 16

Large Uses of Steel in Small Ways

Snow Fences

APPLICATION of steel to highway work, both in construction and maintenance is found in a great variety of uses. In those states where winter involves considerable snowfall, one of the most difficult problems facing the highway commissions is the clearance of roads to make them passable for automotive traffic. In addition to the highly developed plows, scrapers, etc., used for clearing the surface of roads after snow has been driven in upon them, is the older practice of erecting snow fences to prevent snow from drifting onto the highways.

The first fences were constructed entirely of wood, similar to the old rail fences. A later development was the erection of picket fences having vertical wooden slats laced together by horizontal strands of wire. The latest development in snow fences is that of pressed steel manufactured by a Minnesota metalworking company. Although the initial cost is higher than for wooden fences, many economies are claimed for the steel fence. The replacement cost of units, the speed of installation and the compactness of storage all are claimed more advantageous in the use of the steel fence. Two men can install 2000 to 3000 feet of steel fence in an 8-hour day in 8-foot sections and 3000 feet of steel fencing can be loaded in a farm wagon as against a bulkiness of six trucks for a similar length of picket fence line. The steel fence posts are driven into the ground one and a half feet deep at an angle of 23 degrees against the wind and away from the road. Where soil is loose or posts are over 7 feet in length ½-inch braces and anchor pins are used as braces.

Copper bearing galvanized sheets of 26 gage are used for the standard cross-boards which are 6 inches wide and 8 feet 4 inches long. These are of standard lengths and are interchangeable. For permanent fences such as some railroads in the northern states find necessary, a heavier facing is pressed out of 24 gage sheet steel. Two V-crimps are pressed into the sheets, making an impression about an inch deep longitudinally, this operation reinforcing the strip. Slots about ½-inch wide and 3 inches long are cut in the ends of the steel enabling the cross-boards to be hooked on to the uprights. The posts are painted steel angles of 2 x 1½-inch x 6 feet and are either ⅛ or ³⁄₁₆-inch thick as specified.

The steel fence with 6-foot posts of ⅛-inch thickness weigh 3.35 pounds per lineal foot and with 6-foot posts and ³⁄₁₆-inch sections, the weight is 3.89 pounds per lineal foot. It is estimated that a total 2000 to 3000 tons of steel sheets and steel angles soon will be consumed annually in the United States in the manufacture of these snow fences. The Minnesota company has just placed its product on a large scale production basis. The company has installed a machine that is being operated to stamp out brackets on ten posts a minute.

Whereas a wooden fence will be subject to considerable breakage and deterioration after three or four years, the manufacturers of steel snow fences expect their products to perform their functions satisfactorially for more than 30 years.

THIS is the one-hundred ninth of a series of articles dealing with some of the obscure uses of steel which go far toward absorbing the American tonnage.

Among articles appearing every two weeks and not included in Vol. I containing 51 separate descriptions are:

Vacuum Bottles	*Suspenders*
Highway Guards	*Screw Hooks*
Numbering Machines	*Steel Bridging*
Joist Hangers	*Mail Boxes*
Straight Razors	*Steel Shelving*
Piano Wire	*Automobile Bumpers*
Type Molds	*Tire Chains*
Swords	*Bathroom Fixtures*
Paving Guards	

Studies Potash Mining

A discussion of methods of mining potash salts in France and Germany, geology of the deposits, a description of the refining of crude salts for exports and an estimate of the cost of production are presented in bulletin No. 274 of the bureau of mines, Washington. Nearly 95 per cent of the present world production of commercial potash is derived from the soluble potash-salt deposits of Germany and France.

The Metal Merchants association, New York, held its fourth annual dinner, Feb. 9. Earnest H. Katz, president, Bayonne Steel Co. Inc., was in charge of arrangements.

Editorials

Chicago Again Setting Ingot Pace
Short Week to Come, if Economic
Cokemakers as Efficient as Packers
Carriers May Say What Scrap Is
Joliet Works Is Safety-Minded

Good Quarter, at Least, Assured

AS MUCH skepticism as wonderment has been created by the record increase of 31,137 tons in steel ingot production in January. Like the first melon of spring the 152,304-ton daily rate has been examined, thumped and pinched, and subjected to all manner of tests. Perhaps the reaction is not illogical, considering the nine months of relapse and vacillation that followed the attainment of an all-time high last March. Is there any real substantial foundation to the January increase and does it augur well for the year?

That the 3,959,904 tons of ingots produced last month has gone directly into finished products is not doubted. It was demand from the freight car, automotive and farm implement industries that largely made this total possible. With the exception of the automotive industry, whose conditions are special, there are no stocks either of raw material or finished products. The country's shelves are literally bare of steel.

The question then suggests itself, Will this heavy demand for steel continue? It is enough to look to the current quarter. At the moment the automotive industry is more spotty; January output is now on dealers' floors and February is proving a period of digestion, but nothing has developed materially to dim the high expectations for 1928. There is a large body of opinion that believes considerable railroad equipment business has been held back for 1928 and will shortly be released. If the agricultural community does not invest a record total in new tools the usually far-seeing implement makers will have guessed wrong. In the past fortnight demand for steel has become more diversified and the base of the buying structure has broadened perceptibly.

It is noteworthy that while operations have increased moderately at Pittsburgh and opinion there is rather conservative, last year's schedules have been wholly obliterated by the strides taken by the younger and more spirited Chicago district. Two more blast furnaces than a year ago are now active at Chicago and steelmaking is 5 to 8 per cent higher. There is no better portent than this. Pittsburgh and eastern Pennsylvania can be relied upon for the prosaic, steady run of tonnage; it is the margin by which Chicago tops the remainder of the industry that frequenly converts a mediocre into a good year.

Remaking Definition of Scrap

AN ARCHAIC definition of iron and steel scrap seems likely to be revised to fit conditions which long ago outgrew it. Freight classifications for a long time have defined scrap as "scraps or pieces of iron or steel having value for remelting purposes only."

Inasmuch as many grades of actual scrap, which should be so classified and bear freight rates as scrap, are not remelted as they are reclaimed, the definition falls short. Efforts have been made for several years to bring about a change, to avoid constant clashes between carrier and shipper. At last the interstate commerce commission has, in the course of a decision under a complaint of excessive charges, definitely instructed the carriers to proceed with a revision of this definition.

This opens up a wide subject for debate between producers, brokers and the railroads, as well as consumers. The commission puts into its instruction an admonition to use due haste in revision. It suggests: "The fact that such a revision may be attended with difficulty is no justification for denying to complainant reasonable rates."

Solution on an equitable basis of this long-standing matter of discord will be a long step toward simplifying the handling of scrap. It will eliminate much of the bickering that has prevailed in the past and will give a better basis for the industry.

The commission gives the railroads no instruction as to how they should proceed, but suggests a tentative definition as a starting point for negotiations and conferences. The fact that

notice finally is being taken of the inadequacy of the definition is a distinct gain to the industry.

Labor Differs on Five-Day Week

LABOR unions in various sections of the country are seeking a tryout of the five-day week in the building trades. The Employing Plasterers' association, and the Journeymen Pumbers' union, of Chicago, have negotiated a "trial contract" by which the five-day week is to be the subject of experiment during the next three months. The understanding is that the union will return to the existing five-and-a-half-day week without murmur if the trial period fails to bring about fitting results.

On the other hand, journeymen plumbers in Chicago have voted unanimously against the five-day week, and the Bricklayers' union also held a meeting on the subject without deciding on the question of the 40-hour week. The business agent of the Plumbers' union aptly cites the fact that the five-day week actually might jeopardize the employment situation. "Any attempt to establish the 40-hour week now would be in violation of our agreement, which expires in 1930," he says. "Building prospects for 1928 are bright, but agitation for unreasonable concessions at this time might prove disastrous. It is questionable whether the short week in the building industry will solve any unemployment situation."

Leaders of union labor in the United States generally favor the five-day week as an ultimate aim, but still look at the question sensibly enough not to try to force the 40-hour week upon employers when economic conditions do not warrant such attempts.

Accidents Are Made Unpopular

AN UNUSUAL record for safety has been attained by the Joliet works of the Illinois Steel Co., at Joliet, Ill. In this cradle of industrial accident prevention, after thirty-five years of painstaking effort by management and men, the entire plant operated 256 days consecutively without a single lost-time accident. This involved 2496 men for 5,028,640 hours. Probably there was a chance every minute for an accident to have happened to any one of these men.

This record was not achieved by chance. For a third of a century, almost for the length of an average life, men have labored diligently with material things and with the human equation to reduce the accident. Management has a two-fold incentive, humanitarian, in reducing human suffering, and financial, in that accidents cost money in many ways. The worker has only the personal incentive, to avoid pain and loss to him.

It is regrettable that savings from safety are negative, the results of things that did not happen, and cannot be computed. Every man knows that hundreds of men have full complement of limbs and organs and possess life, who would be maimed or dead if accident prevention had not averted disasters. Yet no man knows that as an individual he owes his own life and limbs to it.

The showing at Joliet works indicates that safety-mindedness has been attained to a high degree. Education and reiteration have made the thought of accident prevention as automatic as walking or breathing.

Saving the Last Remnant

IN THE days when economies were being applied in the packing of meats the height of efficiency was reflected in the statement that every part of the hog but the squeal was being utilized.

When by-product coke manufacture was developed and the distillates formerly wasted into the air from beehive ovens were recovered there remained one large source of waste. The incandescent coke from the ovens, at 1800 degrees Fahr., was quenched by pouring cold water over and through it. A tremendous waste of heat was involved.

A method now has been devised and put into successful operation by which the coke is cooled by being penetrated by an inert gas, which does not support combustion but conveys the heat from coke to boiler and generates steam. Sufficient steam to supply all power needs of the coke plant is claimed, with often an excess for use by other departments.

That is recovering the last waste from the coking of coal. It is making use of the squeal.

What Our Readers Are Thinking

Commends Article on Buyers Code

To the Editor:

AS SECRETARY and counsel of several trade organizations, I have been very much interested in reading the article which appeared in the Jan. 19 issue of the IRON TRADE REVIEW on the subject of "Beating Down Prices" vs. Buyers Code of Ethics.

In the opinion of many of my clients, who have read your article, you are much to be commended for publishing articles of this type and cannot publish them too frequently.

HERBERT S. BLAKE, *Attorney at law.*
New York City, Feb. 3, 1928.

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E. L. SHANER, Editor. *J. D. PEASE, Advertising Director.* *F. F. LIGHT, Circulation Manager.*

Solving Patrons' Problems Builds Business. Page 439.

AN INTERESTING case where manufacturers and consumers jointly are wrestling with a problem, the solution of which depends on co-operative understanding and action, is presented in the report, page 478, of the meeting of the refractories division of the American Ceramic society. Laboratory tests fail to provide all of the necessary information on the service of firebrick; it is only through experimental use in actual practice that relative qualities are revealed. Users are studying their needs, and makers are working with them.

The Readers' Page

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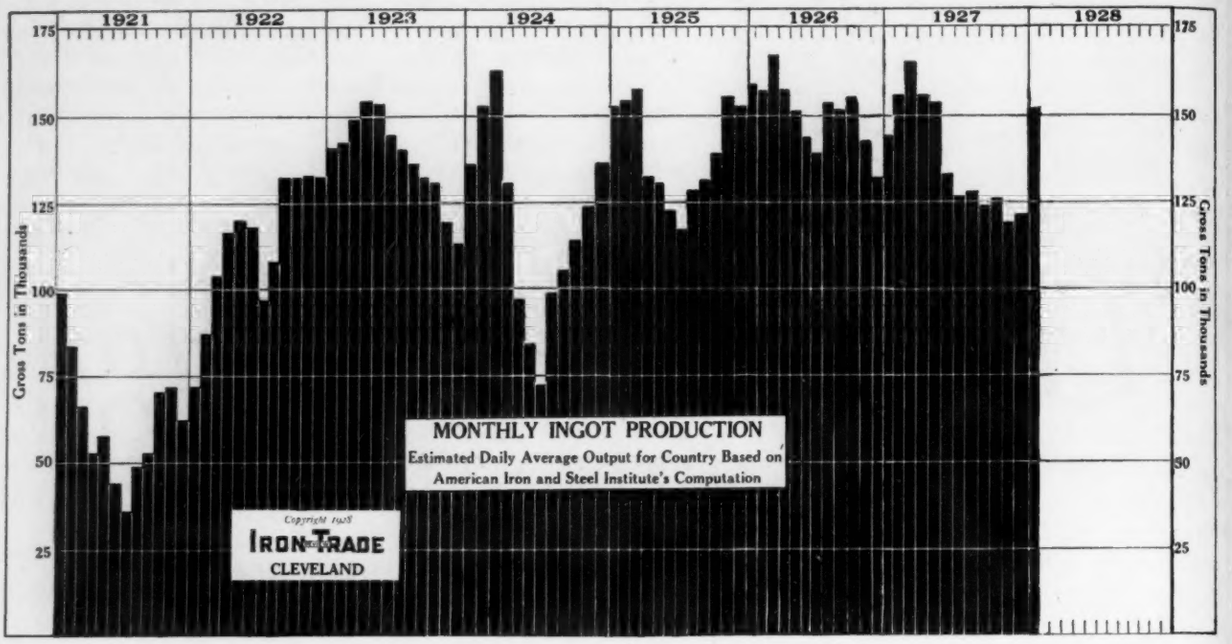
The Business Trend



Operations in Steel Swing Upward

By JOHN W. HILL, Financial Editor

IF THERE were any misgivings that industry would fail to sing the tune of the cheerful year-end forecasts, these have been dissipated by the records of actual activities now coming to hand. The showing of steel ingot production, provided evidence of an unimpeachable nature. The rise in steel ingot production, of steel bookings, of prices, and of blast furnace operations and output all point to but one conclusion.

THIS conclusion is that business indeed turned upward with the turn of the year. How extended the recovery will be remains to be seen, but it is unmistakably clear that improvement now is under way following the slack period of adjustment during the closing months of 1927. Contributing to this view also are the records of increased freight movements, of a gain in January building construction, and of expanded automobile production and industrial employment generally.

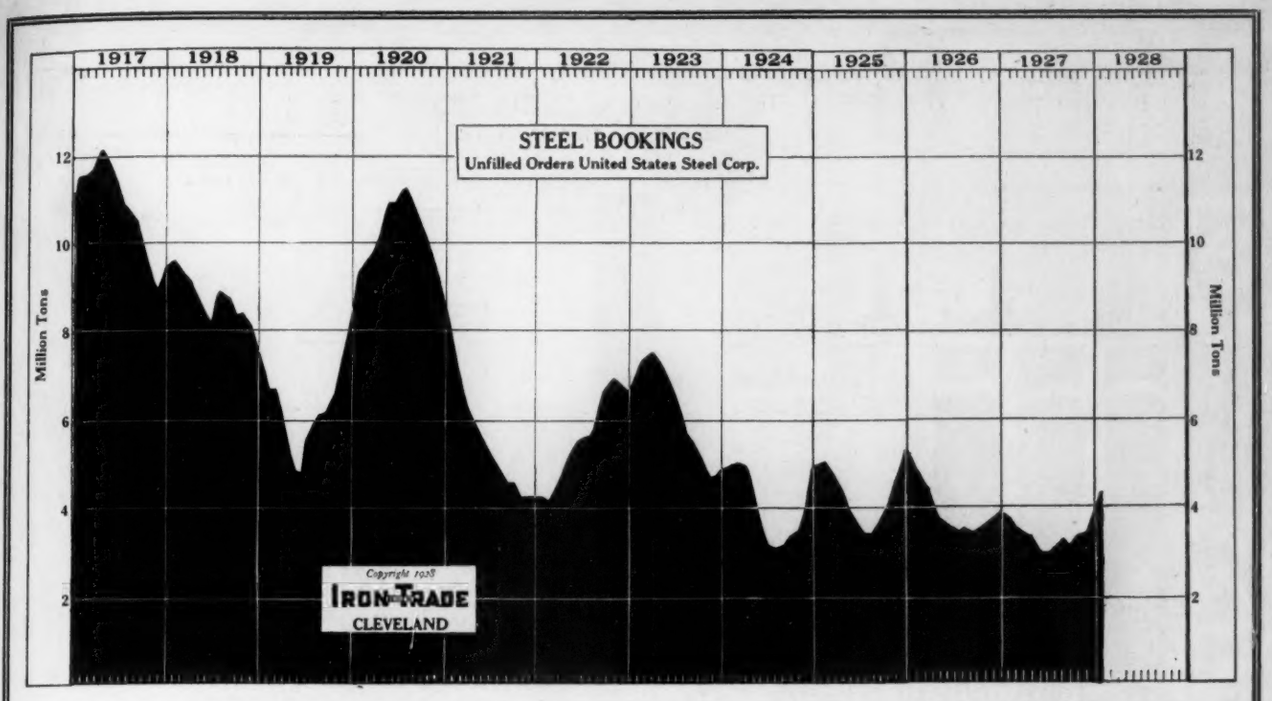
THE most striking record yet to appear is that of steel ingot production. The trade was expecting a gain but not one of such proportions. The daily average output of ingots for January was 152,304 tons. This compared with 121,167 tons one month before. This was a gain of 31,137 tons or over 25 per cent.

NEVER before during the ten years of available monthly statistics of ingot production has there been a comparable tonnage increase in any one month. In the war year of 1918 there was an increase in the daily average output 29,830 tons or 26 per cent from February to March. The increase of last month canceled all the loss since last May.

MOREOVER the rate of production of steel was brought within 9 per cent of the peak for all time in March of 1927, when the daily average rate climbed to 166,638 tons. Present indications are that a new peak will be attained in ingot output this spring. The gain of 300,000 tons of unfilled orders of the United States Steel Corp. gives evidence of the large volume of buying.

ALTHOUGH the price tendency in steel is upward, there have been no violent advances and very probably there is not much buying beyond real needs out of price considerations. What is more likely is that large iron and steel consumers have had an expansion of steel rebuilding construction and to some extent, the building construction and to some extent, the railroads. All in all, the picture is one of generally improving industrial activities.

The Business Trend

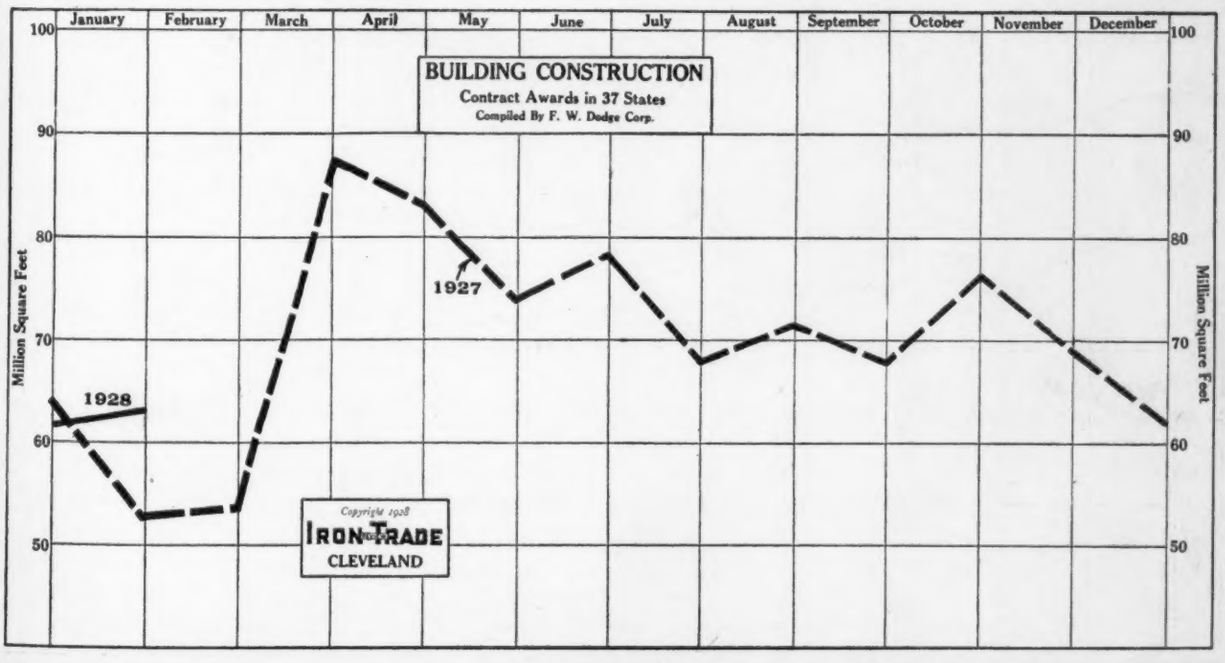


Steel Bookings

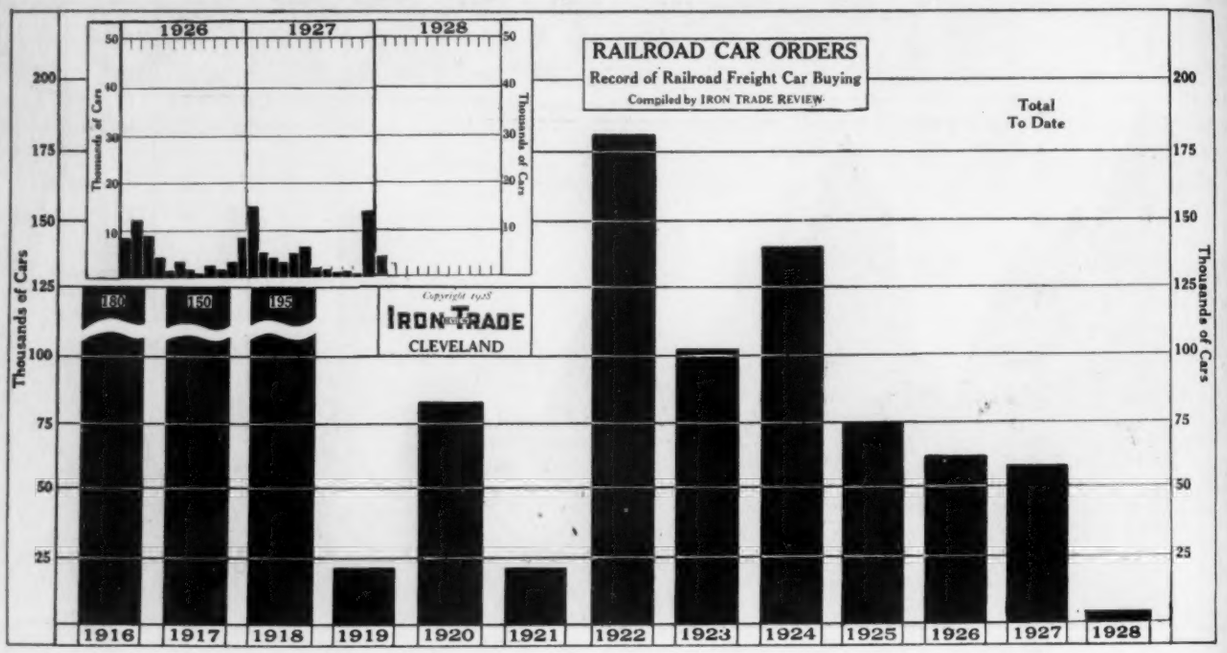
FURTHER striking evidence of the general improvement in the iron and steel industry is found in the report of unfilled orders of the United States Steel Corp, at the close of January. The increase in orders during the first month of the year totaled 303,000 tons bringing the aggregate of steel bookings to 4,275,000 tons. This gain in orders took place in the face of an increased production of 25 per cent and larger shipments. They reflect heavier buying and increased industrial activities generally.

Building Construction

JANUARY brought a small increase in building construction. Total contracts awarded in 37 states east of the Rocky mountains reported by the F. W. Dodge Corp., totaled 63,716,900 square feet in January, compared with 63,200,200 square feet in December, 1927, and 53,262,600 square feet in January, 1927. The gain over one year ago was almost 20 per cent. Between December 1926 and January 1927 there was a decline of 17 per cent in contrast with the gain between those months this year.



The Business Trend

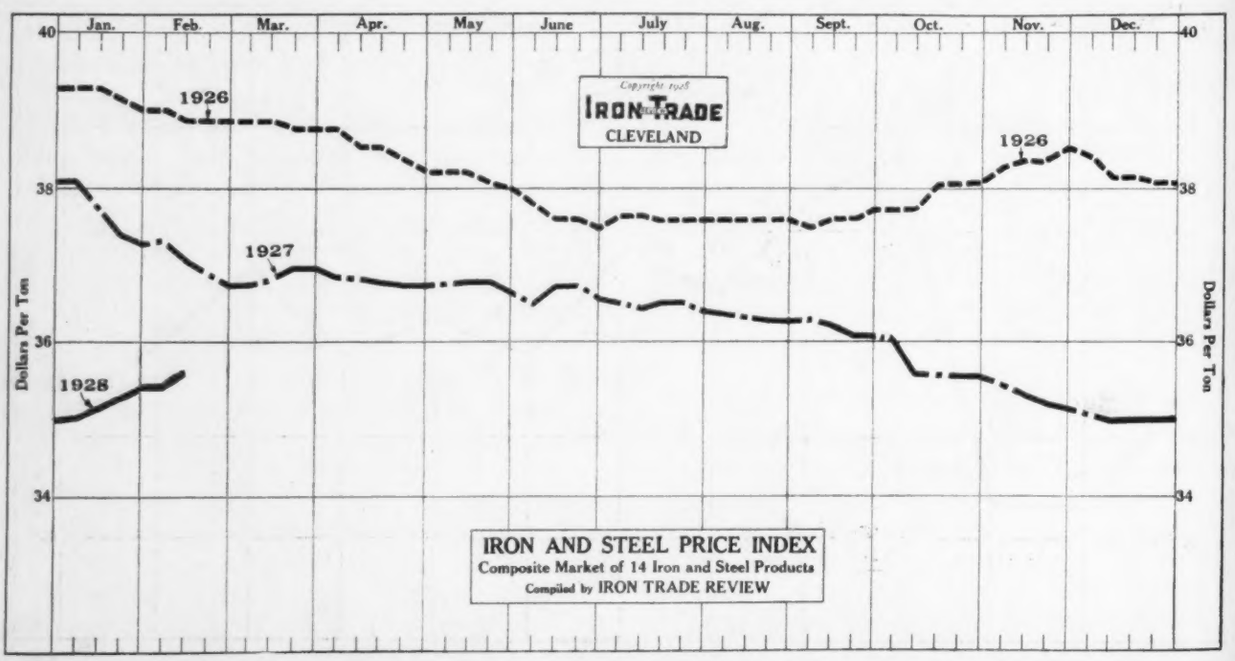


Freight Car Awards

RAILROAD buying of freight cars in February has been showing a substantial gain over the total for January which was approximately 4000 cars. The January volume of orders for cars was sharply down from the December figure. The revised total for the closing month of last year is 14,897 cars the largest for any month since December, 1925. Aggregate orders for 1927 were 57,845 cars compared with 60,975 cars in 1926 and 77,110 cars in 1925. This year's aggregate should be higher.

Steel Price Index

PRICE strength continues one of the most outstanding features of the iron and steel markets of the new year. IRON TRADE REVIEW'S composite market average has been rising steadily since the beginning of January. In the second week of the month of February the composite stood at $35.61 a ton compared with $35.45 a ton the preceding week and a low point of $35.09 a ton in December. Finished steel has held firmest. Fill-in orders of sheets are being placed at better levels and bars are going at the new prices.



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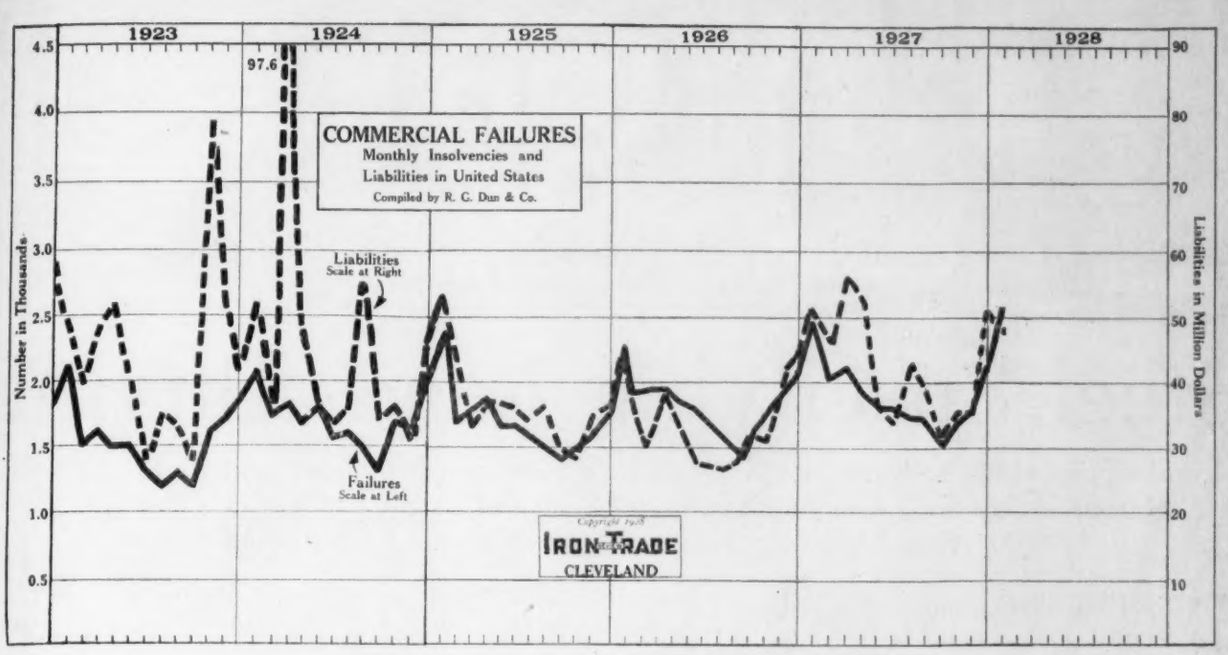
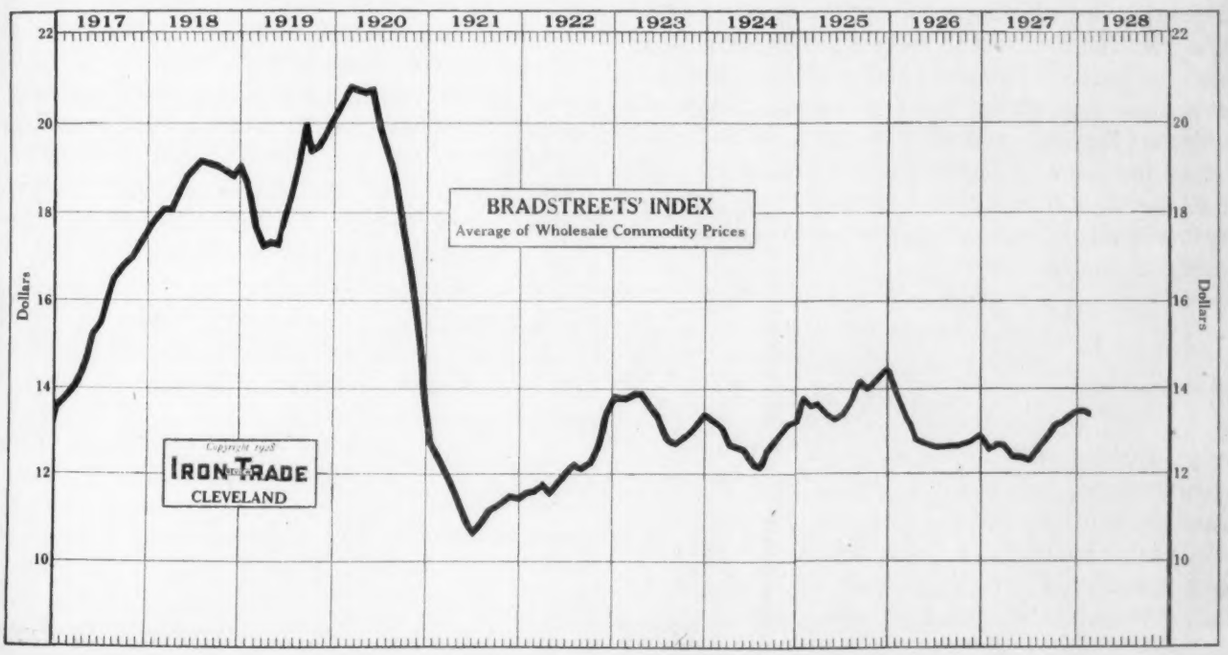


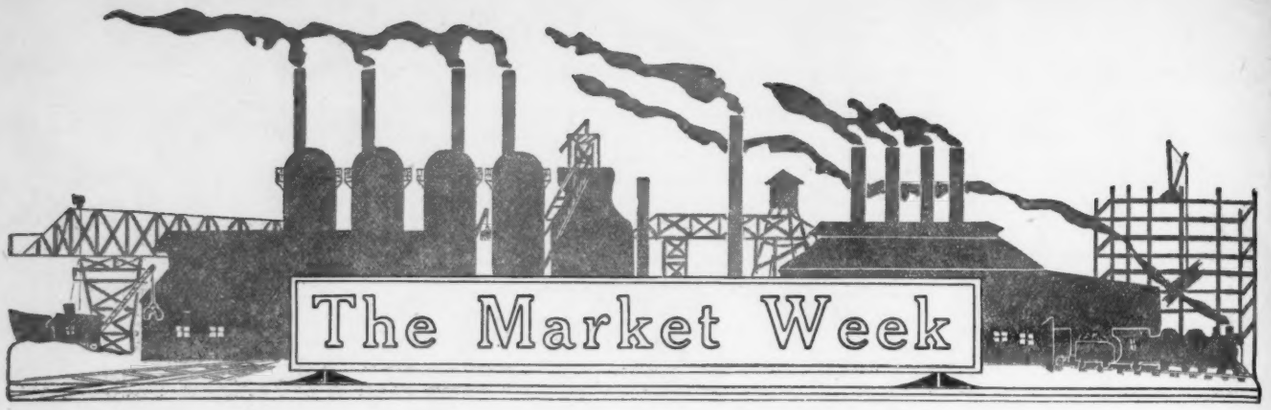
Commercial Failures

THE larger number of commercial failures in the United States reported for January marked a seasonal trend, the high point of each year always being reached in the opening month. With a total of 2643, January business failures showed an increase of more than 20 per cent over those of December and a rise of 7 per cent over those of January, 1927. However, liabilities of $47,634,000 were less than in December or in January, 1927. One year ago liabilities were $51,290.000.

Bradstreet's Index

BRADSTREET'S index of commodity prices on Feb. 1, showed a slight decline after six consecutive advances. At the beginning of the present month the index showed a decrease of three-tenths of one per cent from the preceding month, but a rise of 9.2 per cent over the low point of 1927 reached on July 1. Compared with 12 months ago the price level shows an advance of 8 per cent. Of 13 commodity groups three were higher and 10 were lower in January than in the preceding month.





Steel Specifying Leads Buying

Consumption Holds to Recent High Levels and Production Increases Slightly—Price Trend Continues Upward, with $2 Gain in Hot Strip and Attempt to Firm on Sheets—30,000 Tons Second Quarter Iron Sold—French Low Again on Pipe

CONSUMERS of finished steel are specifying against first quarter contracts at a rate indicating no abatement of consumption, but fresh buying lags as the necessity for supplemental purchases has not arisen and producers are not yet soliciting second quarter business.

Production, meanwhile, is slowly working up. Eastern Pennsylvania mills have eased off in some heavy products but the Pittsburgh district approaches an 85 per cent ingot rate, Chicago holds at about 93 per cent and the Mahoning valley, unsteady recently, has made important gains this week. Steel production generally approximates the high rate of late January and thus far appears to have topped last February slightly.

All changes in steel prices continue to be advances. Hot strip levels have been marked up $2 per ton for the second quarter. Sheetmakers have reaffirmed for the next quarter the levels they originally announced for this quarter but have since shaded up to $5 per ton. The small business booked recently in bars, plates and shapes has been on the basis of 1.85c, Pittsburgh, or $1 per ton over current contracts. If makers again advance, as planned, it will attest their confidence in the market.

Industry Is Confident

For evidences of a less active market, seasonal conditions are largely responsible. Mid-February normally is a time when buying is not spectacular and the mills are busy working off tonnage booked in January. Specifications for finished steel are emanating from such diversified sources and the course of prices is so contrary to the softness of a year ago that, considered broadly, the position of the industry is better than a year ago.

Although the situation is far from serious, this week as for several preceding there is increasing talk of deferred deliveries. Neither price nor delivery is any consideration in spotty automotive specifying, but the stiffer price attitude of fabricators, especially at Chicago, is precipitating some structural awards. Freight car builders are almost thirty days advanced over last year's program.

Iron Up at Pittsburgh

For mid-quarter, pig iron is active both in sales and shipments. At Pittsburgh several producers have advanced 25 cents, to $17.50, valley, on foundry and malleable. On 5000 tons of basic the Edgewater Steel Co. has closed with a nearby furnace at $18.13, delivered, against $18.76 asked by valley stacks. Automotive foundries are taking heavy tonnages from the lake furnaces. Sales at Cleveland totaled 28,000 tons. Boston, in selling 10,000 tons, had the best week in a month. Inquiry at St. Louis aggregates 10,000 tons and at New York 12,000 tons. Prices in the East are a trifle unsteady, for one thing because as low as $16.25, furnace, has been asked by a Buffalo producer. The American Radiator Co. has closed on 30,000 tons of foundry iron for second quarter at prices higher than it paid for first quarter iron.

Rail orders are dwindling, but track fastening demand holds up, especially at Chicago. Baltimore & Ohio railroad has placed 2000 box car bodies and the Norfolk & Western repairs to 1000 hopper cars.

Good Week at Chicago

Viewing sales, specifications and shipments as a composite, not in two years have Chicago producers of heavy finished steel experienced such a good week. Demand for bars is general. Carbuilders are taking more plates. A good week in structurals is capped by 19,000 tons for the Chicago Civic Opera house.

The Market Section

Comparative Prices of Iron, Steel and Coke

Representative Market Figures for This Week, Last Month, Three Months and One Year Ago

	Feb. 15, 1928	Jan. 1928	Nov. 1927	Feb. 1927
PIG IRON				
Bessemer, del. Pittsburgh	$19.26	19.26	19.76	20.76
Basic, valley	17.00	17.00	17.00	17.85
Basic, eastern, del. eastern Pa.	19.50	19.50	19.50	21.00
*No. 2 foundry, del. Pittsburgh	19.01	19.01	19.26	19.81
No. 2 foundry, Chicago	18.50	18.50	18.50	20.25
*Southern No. 2 Birmingham	16.00	16.00	16.50	18.00
*Southern Ohio, No. 2 Ironton	19.00	19.00	19.00	20.00
**No. 2X, Virginia furnace	20.50	20.50	21.25	22.00
**No. 2X, eastern, del. Phila.	20.76	20.51	20.51	22.26
Malleable, valley	17.25	17.25	17.50	18.10
Malleable, Chicago	18.50	18.50	18.50	20.25
Lake Superior charcoal, del Chicago	27.04	27.04	27.04	27.04
Gray forge, val., del. Pittsburgh	18.51	18.51	18.76	19.31
Ferromanganese, del. Pittsburgh	104.79	104.79	94.79	104.79
*1.75 to 2.25 silicon. **2.25 to 5 silicon.				
COKE				
Connellsville, furnace, ovens	2.70	2.70	2.80	3.35
Connellsville, foundry, ovens	3.75	3.75	3.75	3.85
SEMIFINISHED MATERIAL				
Sheet bars, open-hearth, Youngstown	34.00	34.00	34.00	36.00
Sheet bars, open-hearth, Pittsburgh	34.00	34.00	34.00	35.00
Billets, open-hearth, Pittsburgh	33.00	33.00	33.00	34.00
Wire rods, Pittsburgh	44.00	41.50	41.00	43.50
FINISHED MATERIAL				
Steel bars, Pittsburgh	1.85	1.80	1.75	1.90
Steel bars, Chicago	1.95	1.90	1.85	2.00
Steel bars, Philadelphia	2.17	2.12	2.07	2.22
Iron bars, Philadelphia	2.12	2.12	2.07	2.22
Iron bars, Chicago	1.95	1.90	1.85	2.00
Shapes, Pittsburgh	1.85	1.80	1.75	1.90
Shapes, Philadelphia	2.07	2.08	2.07	2.12
Shapes, Chicago	1.95	1.90	1.85	2.00
Tank plates, Pittsburgh	1.85	1.80	1.75	1.85
Tank plates, Philadelphia	2.10	2.05	2.07	2.22
Tank plates, Chicago	1.95	1.90	1.85	2.00
Sheets, black, No. 24, Pittsburgh	2.90	2.80	2.80	2.90
Sheets, blue anl., No. 10, Pittsburgh	2.10	2.10	2.10	2.20
Sheets, gal., No. 24, Pittsburgh	3.65	3.65	3.70	3.70
Sheets, black, No. 24, Chicago	3.05	3.05	3.00	3.00
Sheets, blue anl., No. 10, Chicago	2.25	2.25	2.30	2.35
Sheets, galvanized, No. 24, Chicago	3.90	3.90	3.85	3.85
Plain wire, Pittsburgh	2.50	2.40	2.40	2.45
Wire nails, Pittsburgh	2.65	2.50	2.50	2.60
Tin plate, per base box, Pittsburgh	5.25	5.25	5.30	5.50
OLD MATERIAL				
Heavy melting steel, Pittsburgh	15.00	15.35	14.20	16.10
Heavy melting steel, eastern Pa.	14.00	14.00	14.00	15.00
Heavy melting steel, Chicago	12.50	12.25	11.50	13.10
No. 1 wrought, eastern Pa.	15.25	15.25	15.75	17.00
No. 1 wrought, Chicago	12.35	12.65	11.25	13.95
Rails for rolling, Chicago	15.00	15.00	13.95	16.00

Composite Market Average

The Fourteen Leading Iron and Steel Products Included are Pig Iron, Billets, Slabs, Sheet Bars, Wire Rods, Steel Bars, Plates, Structural Shapes, Black, Galvanized and Blue Annealed Sheets, Tin Plate, Wire Nails and Black Pipe

This week (February 15, 1928)	$35.61
Last week (February 8, 1928)	35.61
One month ago (January, 1928)	35.27
Three months ago (November, 1927)	35.35
One year ago (February, 1927)	36.97
Ten Years ago, (February, 1918)	56.67
Fifteen years ago (February, 1913)	28.05

A French maker has underbid by $2 per ton the low domestic bid of $29.75, Birmingham, on 2000 tons of cast iron pipe for Detroit. Foreign makers of steel pipe are interested in a 150,000-ton steel pipe line developing in the Southwest.

Sheet prices which mills will ask for the second quarter are 2.10c, Pittsburgh, on blue annealed, 2.90c on black, 3.75c on galvanized and 4.15c on autobody. All Mahoning valley mills are on this week, despite the dragging automotive industry. January production of independent mills was the heaviest since last March and 23.5 per cent above last January; sales fell below December but topped last January by 16 per cent.

The IRON TRADE REVIEW composite of fourteen leading iron and steel products is unchanged this week at $35.61, which compares with $35.33 a month ago and $36.75 a year ago.

Late News Flashes

Buffalo Steelworks at 80 Per Cent

Buffalo, Feb. 14.—Steelworks here are operating at an average of 80 per cent of capacity.

All Valley Sheet Mills Are On

Youngstown, O., Feb. 14.—Steelworks operating rates here have regained last week's loss and now average well above 70 per cent. Out of 53 independent open hearths, 39 are active against 37 last week. Independent bar mills have increased to 60 per cent and Carnegie Steel Co. to 70. Every independent sheet plant in the valley is operating.

Corporation Steel Rate is Gaining

New York, Feb. 14.—Steel corporation subsidiaries are operating at 90 per cent, a gain of two points, with independents at 80 per cent.

Chicago Steel Rate Holds Above 90

Chicago, Feb. 14.—Steelmaking operations here continue at 90 to 93 per cent. Illinois Steel Co. has ten furnaces active at Gary, nine at South Chicago, and one at Joliet. Youngstown Sheet & Tube Co. has two steelworks stacks active, Inland Steel four and Wisconsin Steel three.

Put on More Open Hearths at Pittsburgh

Pittsburgh, Feb. 14.—Fully 80 per cent of steelmaking units in the Pittsburgh district are operating and the average approaches 85 per cent. Pittsburgh Steel Co. has added two open hearth furnaces at Monessen, making 10 out of 12 active. The interest at Midland, Pa., plans to add one open hearth this week, giving it 8 out of 12 active, and will probably add another later. At Weirton, W. Va., 10 out of 11 keep going, but at Butler only 6 of 10 are active.

Carnegie Steel Co. has added No. 4 blast furnace at Mingo Junction, O. Shenango Furnace Co. has blown out its No. 3 stack for relining, having brought No. 1 stack into production.

Current Rolled Steel Prices

PRICES, CENTS PER POUND, UNLESS OTHERWISE STATED

Semifinished Material

Prices per gross ton

BILLETS AND BLOOMS
4 x 4-inch base

Pittsburgh, open-hearth	$33.00
Pittsburgh, bessemer	33.00
Youngstown	33.00
Cleveland	33.00
Philadelphia	38.30 to 39.30
Chicago	33.00
Forging, Pittsburgh	39.00
Forging, Philadelphia	43.30

SHEET BARS

Pittsburgh, Youngstown	$34.00
Cleveland	33.00

SLABS

Pitts., Young., and Cleve.	$33.00

WIRE RODS

Pittsburgh, Cleveland	$44.00
Chicago	45.00

SKELP

All grades, Pittsburgh	1.85c

Standard Structural Shapes

Pittsburgh	1.85c
Philadelphia, del.	2.07c to 2.13c
New York, del.	2.14c
Chicago	1.95c
Cleveland, del.	2.04c
Buffalo	1.95c
Bethlehem	2.00c
Birmingham	2.00c
Pacific coast, c.i.f.	2.35c

Steel Plates

Pittsburgh	1.85c
Philadelphia, del.	2.10c
New York, del.	2.175c
Chicago	1.95c
Cleveland	2.04c
Buffalo	1.95c
Coatesville, Sparrows Point	2.00c
Birmingham	2.00c
Pacific coast, c.i.f.	2.25c to 2.30c

Iron and Steel Bars

Pittsburgh, soft steel	1.85c
Pittsburgh, cold finishing	2.00c
Pittsburgh, forging quality	2.10c
Philadelphia, soft steel	2.17c
New York, soft steel	2.19c
Chicago, soft steel	1.95c
Cleveland, soft steel, mill	1.85c
Cleveland, soft steel, del.	1.87½ and 2.04c
Birmingham, soft steel	2.00c
Buffalo	1.95c
San Francisco, soft steel	2.35c
Pittsburgh, refined iron	2.75c to 4.25c
Pittsburgh, reinforcing billet	1.85c to 1.90c
Chicago, reinforcing billets	2.30c to 2.75c
Chicago, reinforc. rail steel	1.85c to 1.95c
Youngstown, reinf. billet, base	1.90c to 2.00c
Chicago, rail steel	1.80c to 1.85c
Rail steel, mill	1.65c to 1.75c
Philadelphia, common iron	2.07c to 2.22c
New York, common iron	2.09c to 2.24c
Chicago, common iron	1.95c

Hoops, Bands, Strips

Hot rolled strip, under 3-inch, Pitts	2.20c to 2.40c
Hot rolled strip, 3 to 6-inch, Pitts.	2.10c to 2.20c
Hot rolled strip, 6 to 12-inch, Pitts.	1.90c to 2.00c
Hot rolled strip, 12 to 24-inch, 16 gage and heavier, coils or cut lengths, 1.85c plate basis, or 2.10c blue annealed sheet basis, with plate or sheet extra cards applying.	
Hot rolled strip steel, Chicago	2.10c to 2.40c
Bands, Chicago, under 6-in.	2.20c to 2.40c
Bands, Chicago, 6-in. and over	2.10c to 2.20c
Cold rolled strip steel, hard coils, 1½ inches and wider by 0.100-inch and heavier base, Pittsburgh, Cleveland (less than 3 tons)	3.15c
Worcester, Mass.	3.40c

Cold Finished Steel

Cold finished steel bars, drawn or rolled, Pitts., Chi., c.l.	2.30c
Shafting (turned, polished) Pitts.	2.30c
Shafting (turned, ground) mill (Depending on size, 1⅞ to 7-inch)	2.45c to 2.90c
Cold finished steel bars, Cleve.	2.30c

Chain, Piling, Cut Nails

Cut nails, c.l., f.o.b. mills	2.80c
Chain, 1-in. proof coil, Pitts.	6.00c
Sheet piling base, Pittsburgh	2.20c to 2.25c

Alloy Steel

Hot Rolled

F.o.b. Pittsburgh or Chicago
To Tonnage Users in Auto. Industry

S.A.E. Series Number	100 lbs. Bars
2100 (*½ per cent Ni. 0.10 to 0.20 per cent C)	$ 2.90 to 3.00
2300 (3½ per cent nickel)	4.00 to 4.10
2500 (5 per cent nickel)	4.90 to 5.10
3100 (Nickel chromium)	3.00 to 3.10
3200 (Nickel chromium)	4.50 to 4.75
4100 (Chromium molybdenum)	3.00 to 3.10
4100 (Cr. Mo. 0.25-0.40)	3.90 to 4.05
4615 (Ni. 1.50%; Mo. 0.10-0.20)	4.05 to 5.20
5100 (Chromium steel)	3.00 to 3.10
6100 (Cr. V., forging)	4.00 to 4.10
6100 (Cr. V., spring)	3.50 to 3.75
9200 (Silico Mang., spring steel)	3.00 to 3.20
Ni. Cr. V. (Ni. 1½%, Cr. 1%, V. 0.15%)	4.00 to 4.10

*Mill number not formally accepted by S. A. E.

Hot rolled alloy billets 4 x 4-inch and over take the same prices per gross tons as same specification of alloy bars per net ton. Sizes from 4 x 4-inch down to 2½ x 2½-inch take same basis plus $5 a ton extra. Billets smaller than 2½ x 2½-inch take bar price on net ton basis.

Cold Rolled

Cold rolled alloy steels take 1.00c a pound extra over hot rolled when mean carbon is 0.30 or under. When the carbon is above 0.30 the extra for cold rolled is 1.75c, including annealing.

Sheets

SHEET MILL BLACK

No. 24, Pittsburgh base	2.90c
No. 24, Philadelphia, delivered	3.22c
No. 24, Gary, Indiana Harbor	3.00c
No. 24, Chicago, delivered	3.05c
No. 24, Birmingham, base	3.05c

TIN MILL, BLACK

No. 28, Pittsburgh	2.90c to 3.00c
No. 28, Gary, base	3.00c to 3.10c

GALVANIZED

No. 24, Pittsburgh base	3.65c to 3.75c
No. 24, Philadelphia, delivered	4.07c
No. 24, Gary, Indiana Harbor	3.85c
No. 24, Chicago, delivered	3.90c
No. 24, Birmingham, base	3.90c

BLUE ANNEALED

No. 10, Pittsburgh, base*	2.10c
No. 10, Philadelphia, delivered	2.42c
No. 10, Gary, Indiana Harbor	2.20c to 2.30c
No. 10, Chicago, delivered	2.25c to 2.35c
No. 10, Birmingham base	2.30c

*Plus 10 cents for 40 inches or wider.

AUTOMOBILE

No. 20, Pittsburgh b.	4.00c to 4.15c

IRON

No. 10, Pitts., blue ann., c.l.	2.80c
No. 24, Pitts., box annealed, 1-pass cold rolled, carload	3.75c
No. 24, Pitts., gal., c.l.	4.85c

Tin and Terne Plate

Prices per 100-pound box, Pittsburgh

*Tin plate, coke base	$5.25

Gary, Ind., base 10 cents higher.

Long ternes, primes, No. 24	4.10c

*Prices subject to quantity differentials.

Wire Products

To Jobbers in Carloads

Dealers 5 cents per 100 pounds extra f.o.b. Cleveland and Pittsburgh base.

Bright plain wire, No. 9 gage	2.50c
Annealed fence wire	2.65c
Galvanized wire, No. 9 gage	3.10c
Barbed wire, painted	3.10c
Barber wire, galvanized	3.35c
	Per 100 lbs.
Wire nails	$2.65
Galvanized nails	4.65
Polished staples	3.10
Galvanized staples	3.35
Coated nails, 100 lb. kegs, subject to Sept. 1, 1926, extra, base	2.65
Woven wire fencing (retailers) 12½ gage, 26-in. high 7-in. bars and 12-in. stays, per 100 rods, f.o.b. Pitts.	$20.03

Joliet, DeKalb and Waukegan, Ill., Anderson, Ind., and Chicago prices $1 per ton over Cleveland-Pittsburgh base on products made there; Duluth $2 higher, Worcester, Mass., and Fairfield, Ala., $3 higher.

Rails, Track Material

Standard bessemer rails, mill	$43.00
Standard open-h'th rails, mill	43.00
Relaying rails, St. Louis	24.00 to 31.00
Relay, rails, Pitts. 60 to 90 lb.	27.00 to 30.00
Light rails, 25 to 45, mills	36.00
Angle bars, Chicago base	2.75c
Spikes, railroad, Pittsburgh	2.75c to 2.80c
Spikes, small railroad, 7/16-inch and smaller, Pitts.	2.80c
Spikes, boat and barge, Pitts.	3.10c
Spikes, railroad, Chicago	2.80c
Track bolts, Pitts., stand.	70 off list
Track bolts, Chicago	3.80c
Tie plates, Chicago, Pitts.	2.25c

Iron and Steel Pipe

Base Discounts Pittsburgh and Lorain, O., to Jobbers in Carloads

	Black	Galv.
1 to 3-inch butt steel*	62	50½
1 to 1½-inch butt iron	30	13

Indiana Harbor, Ind., and Evanston, Ill., 2 points less, Chicago del., 2½ points less.

*To large jobbers these discounts are increased on black by 1 point and a supplementary discount of 5 and 5 per cent; on galvanized by 1½ points with a supplementary 5 per cent.

Boiler Tubes

Carload Discounts—Less-carloads 4 points Lower—F.o.b. Pittsburgh Mills

Steel 3¼ to 3¾-inch	42½
Charcoal iron, 3¼ to 4½-inch	9
Seamless hot rolled 3¼ to 3½-inch	46

Further discounts of five to seven 5 per cent for carloads on lap welded steel. On seamless hot rolled several more 5 per cents, and on charcoal from one 10 per cent to two 10 and one 5 per cents.

Cast Iron Water Pipe

Prices per net ton
Class B Pipe

Six-inch and over, Birming'm	$28.00 to 30.00
Four-inch, Birmingham	32.00 to 34.00
Four-inch, Chicago	40.20 to 42.20
Six-inch to 24-inch, Chicago	36.20 to 38.20
Four-inch, New York	40.25 to 41.60
Six-inch and over, New York	36.75 to 37.75
Standard fittings, Bir. base	$100.00

6 to 24-inch, base; over 24-inch, plus $20; 4-inch, plus $10; 3-inch, plus $20; gas pipe fittings, $5 higher.

Class A pipe is $4 higher than Class B.

Bolts and Nuts

F.o.b. basing points, Pittsburgh, Cleveland, Birmingham and Chicago.

Discounts are for legitimate jobbing or large consuming trade purchasing in full-case lots, apply to lists of April 1, 1927. Small lots are 55 to 60 per cent off.

CARRIAGE BOLTS

All sizes, cut thread	70 off

Rolled thread ⅜x6 and smaller take 10 per cent lower list.

Eagle list	70 off

MACHINE BOLTS

All sizes, cut thread	70 off

Rolled thread ⅜x6 and smaller take 10 per cent lower list.

Lag screws	70 off
Plow bolts, Nos. 1-2-3-7 heads	70 off
Tap bolts	70 off
Blank bolts	70 off
Stud bolts without nuts	70 off

Stove bolts, 80-10-5 off in packages; 80-10-5 with 2½ off in bulk.

Tire bolts	60-5 off

NUTS

Semifinished	70 off

HEXAGON CAP SCREWS

Milled	80-10-10 off
Upset 1-in. diam. and smaller	85-5 off

SQUARE HEAD SET SCREWS

Milled	80-10 off
Upset, 1-in. diam. and smaller	80-10-10 off

Rivets

Struct., c.l., Pitts.-Cleve.	2.75c
Structural rivets, c.l., Chicago	2.85c

**Rivets, 7/16-inch and smaller, Pittsburgh, Cleveland and Chicago 70 and 10 to 70, 10 and 5 off

**Some makers quoting 70 off with freight allowed on 300 pounds or more.

Washers

Wrought, c.l., Pitts. dist.	$6.75 off
Wrought, c.l., Chicago dist.	$6.70 to 6.90 off
Lock washers (dealers)	85-5 off
Lock washers (consumers)	85 off

Pig Iron

Interest in Second Quarter Is Stronger—American Radiator Purchases 30,000 Tons—Eastern Market Reflects More Activity

INQUIRIES and purchases for second quarter are assuming importance in the pig iron market. The American Radiator Co. has placed orders for 30,000 tons for various plants, for that period. The Westinghouse Electric & Mfg. Co. is inquiring for its second quarter requirements at Trafford City, Pa. A good share of the sales reported by furnace interests at Chicago and those represented at Cleveland are for April, May and June. Current and future demands in the eastern district continue to show expansion. Shipments are reported by some of the leading producers as exceeding the daily rate in January. The Edgewater Steel Co. is reported to have closed for 5000 tons of basic, while a Rhode Island wire manufacturer is inquiring for 5000 tons.

PITTSBURGH, Feb. 14.—Practically the only inquiry of importance for pig iron is that just issued by the Westinghouse Electric & Mfg. Co. for an undetermined tonnage of No. 2 plain, No. 2X and No. 3 for its Trafford City plant. Several transactions are negotiated quietly each week, some on a reciprocity basis. While one or two furnaces have adopted $17.50, valley, as their asking price for No. 2 plain and malleable, others are quoting $17.25, which still represents the market. The recent order for basic iron placed by Follansbee Bros. Co. was divided between two steel interests instead of going in one direction as previously reported. The Edgewater Steel Co. is understood to have closed for 5000 tons of basic with a nearby steel interest which has quoted $17, furnace, or $18.13, delivered, against $18.76, delivered from valley stacks. Small requirements for bessemer iron are filled by valley merchant stacks at $17.50, valley. One valley steelworks sold a few small lots to a nearby destination at $18, valley.

Boston, Feb. 14.—Pig iron sales in the past week totaled 10,000 tons, the largest in more than a month. One Worcester foundry distributed 1000 tons of No. 2 plain and No. 2X among three furnaces. Another central Massachusetts foundry took 1000 tons, mainly No. 2X, and a third foundry a similar tonnage. The latter two orders went to Buffalo. It is reported Buffalo steel mills accepted business at $16.50 to $16.75, furnace, for No. 2X. Furnaces east of Buffalo met these prices.

New York, Feb. 14.—A number of important consumers are negotiating for pig iron. Central Foundry Co. is figuring on 3000 tons of foundry for its Dundalk, Md., plant and about 2000 tons for its Lansdale, Pa., plant. Essex Foundry, Newark, wants 2000 tons. Stanley works, New Britain, Conn., is understood to have bought 1000 tons of basic for its Bridgeport plant but has not acted on the remainder of the tonnage. Washburn Wire Co., Phillipsdale, R. I., is inquiring for 5000 tons of basic. Prices are unsteady. Eastern Pennsylvania foundry iron is $19.50 to $20, base, furnace, although $20 has not been done on much tonnage. Buffalo foundry iron is quoted $16.25 to $17, base, furnace. Eastern New York state foundry iron is $18, base, furnace, although sales have been made at less. Good sales have been made in Massachusetts, the Whitin Machine works alone having bought 1500 tons. Considerable business also has been placed in Vermont. A report that R. D. Wood & Co. bought 10,000 tons of iron for barge delivery at Florence, N. J., is denied.

The American Radiator Co. has placed orders for 30,000 tons of pig iron, for second quarter, for various plants. Prices paid were slightly higher than for its first quarter tonnage.

Buffalo, Feb. 14.—Withdrawal of the last $16.50, base, on foundry iron for eastern shipment is reported here. The furnace previously quoting this is now on a $17 base, it is reported. There is 5000 tons of inquiry in the Buffalo district proper and double this amount in outside territory, on which prices are being taken. Last week's sales are reported to have totaled close to 10,000 tons. Silicon differentials are being demanded on all new contracts.

Cleveland, Feb. 14.—Current demand for pig iron consists of moderate size lots, with a total of 28,000 tons reported by furnace interests here the past week. One of the leading merchant furnaces has shared to a fair extent in recent activity in the eastern market. Optimistic reports continue to be made to furnace companies regarding operations in the automotive industry, and shipments of pig iron continue heavy. The average daily rate of shipments so far this month reported by leading producers exceeds the average for January, which was superior to December.

Cleveland furnaces are continuing to quote $18, base, furnace, for local delivery. The same price is quoted by lake furnaces for delivery in Michigan, while $17, base, furnace, is the general quotation on business in western Ohio and Indiana.

The Corrigan, McKinney Steel Co. is reported to have relighted one furnace that was out for relining, and to have blown out another for relining, continuing with three furnaces active at Cleveland.

Detroit, Feb. 14.—Shipment of pig iron continues heavier than the production in this district. Automotive foundries are the chief support of the high rate of melt and in turn those foundries on General Motors work are on heavier schedules than those for independent interests. A radiator company is operating better, having both local shops on. A Canadian implement manufacturer recently inquiring for 1000 tons of No. 1 foundry has partly covered. Another recent inquiry has been limited to 500 tons or less, with sales subordinate to shipments. No. 2 foundry and mal-

(*Concluded on Page* 475)

Pig Iron Prices

Per gross ton

Bessemer, valley furnace	$17.50
Bessemer, del. Pittsburgh	19.26
Basic, valley furnace	17.00
Basic, del., Pittsburgh	18.13 to 18.76
Basic, Buffalo furnace	16.50 to 17.00
Basic, del., eastern Pa.	19.25 to 20.25
Malleable, valley furnace	17.25
Malleable, del. Pittsburgh	19.01
Malleable, del. Cleveland	18.50
Malleable, Chicago furnace	18.50
Malleable, Buffalo furnace	17.50
Malleable, del. eastern Pa.	20.00 to 21.00
No. 1 foundry, Chicago furnace	19.00
No. 1X, eastern del., Phila.	21.26 to 21.76
No. 1X, Buffalo furnace	18.00 to 18.50
No. 2 foundry, valley furnace	17.25
No. 2 foundry, del., Pittsburgh	19.01
No.2 fdy., Everett, Mass., fur.	19.00 to 21.00
No. 2 foundry, Buffalo furnace	17.00
No. 2 foundry, Chicago furnace	18.50
No. 2 foundry, Granite City	19.50
No. 2 foundry, Ironton furnace	19.00
No. 2 foundry, del. Cleveland	18.50
No. 2 foundry, del. Phila.	20.26 to 20.76
No. 2 Virginia furnace	20.00 to 20.50
No. 2 foundry, N. J., tidewater	19.78 to 21.76
No. 2 foundry, east N. Y. fur.	18.00
No. 2 Alabama, Birmingham	16.00
No. 2 Alabama, del. Cincinnati	19.69
No. 2 Tenn., Birmingham base	16.00
No. 2 Tenn., del., Cincinnati	19.69
No. 2 Alabama, del. Philadelphia	22.01
No. 2 Alabama, del. Chicago	22.01
No. 2 Ala., del. Chicago, river-rail	20.18
No. 2 Ala., del. Boston, rail-water	22.91 to 24.77
No. 2 Alabama, del. Cleveland	22.01
No. 2 Alabama, del. St. Louis	20.42
No. 2X, east. N. J., tidewater	20.28 to 21.26
No. 2X, eastern, del. Phila.	20.76 to 21.26
No. 2X, foundry, Buffalo furnace	17.50
No. 2X, eastern, del. Boston	23.15 to 23.65
No. 2X, Virginia furnace	20.50 to 21.00
No. 2X, Virginia, del. Phila.	25.04 to 25.54
No. 2X, Virginia, del. Jersey City	25.37 to 25.87
No. 2X, Virginia, del. Boston	25.71 to 26.21
Gray forge, val., del., Pittsburgh	18.51
Low phos., standard, valley	27.00
Low phos., standard, Phila	24.76 to 27.79
Low phos., copper bearing fur.	23.00 to 23.50
Charcoal, Birmingham	28.00
Charcoal, Superior, del. Chicago	27.04

Silvery iron, Jackson county (Ohio) furnace, in per cents: 5—$22; 6—$23; 7—$24; 8—$25; 9—$26; 10—$28; 11—$30; 12—$32; 13—$34.

Bessemer ferrosilicon, Jackson county (Ohio) furnace, in per cents: 10—$30; 11—$32; 12—$34; 13—$36; 14—$38; 15—$40.50; 16—$43.

Coke

Beehive Furnace Fuel Weakens Again as Demand Recedes—Foundry Tonnages Larger

WHILE demands for furnace and heating coke have tapered off, shipments of foundry grades have improved. Warm weather has softened the market for heating coke. A brief expansion of sales of beehive furnace fuel sent the market up temporarily to $2.85 to $3, but prices as low as $2.70 now are available. No inquiries have developed for second quarter.

Pittsburgh, Feb. 14.—The market for beehive furnace coke is beginning to lose some of the strength it acquired during recent purchases by one blast furnace interest which had two stacks in operation for a short time. Owing to the reduced oven output prices quickly responded to this influence, quotations of $2.85 and $3 appearing late last week. Sales have been made since then at $2.75 and $2.70. While inquiries are not out yet for second quarter, producers intimate $3 will be their minimum for that period, although the present market is $2.70 to $2.85. The movement of heating coke is not heavy because of mild weather. Prices of $2.50 and $2.60 are available. Foundry coke shipments on contracts are more active, owing to larger foundry operations. Spot market activity is limited. From $3.75 to $5.10 represents the range of prices.

Production of coke in the Connellsville region in the week ended Feb. 4 was 49,620 tons, against 48,900 tons in the preceding week, according to the *Connellsville Courier*.

Boston, Feb. 14.—No change has developed in foundry coke. Prices are firm.

New York, Feb. 14.—Specifications on foundry coke contracts are improved but demand for spot coke continues to lag. Spot beehive foundry coke continues $3.75 to $4.25, Connellsville, for ordinary brands. Furnace coke is slightly easier and spot prices are $2.75 to $3, Connellsville. By-product foundry coke continues $9 to $9.40, delivered at Newark, N. J. By-product foundry coke in New England continues $11.50, delivered at representative consuming points.

Detroit, Feb. 14.—In keeping with the increased melt at foundries, chiefly on automotive products, demand for by-product foundry coke has increased slightly. The market is unchanged at $9, ovens. Heating coke requirements have subsided and unfilled orders at the ovens are lighter.

Cincinnati, Feb. 14.—The coke market remains strong after the short flurry in specifications last week. Foundry coke is on good demand.

St. Louis, Feb. 14.—Demand for metallurgical coke holds up well. Shipments are satisfactory and some stovemakers and jobbing plants have requested deliveries over contract quotas. By-product interests are operating at capacity. Prices are steady.

Birmingham, Ala., Feb. 14.—Coke production is steady and the market appears to be satisfactory. By-product foundry coke still is $5, Birmingham.

Coke Prices

Beehive Ovens
Prices per Net Ton

Connellsville furnace	$2.70 to 2.85
Connellsville foundry	3.75 to 4.25
New River foundry	7.00 to 8.00
New River furnace	6.00
Wise county, foundry	5.00
Wise county, furnace	4.50
Alabama foundry	5.00

By-Product

Foundry, Newark, N. J., del.	9.00 to 9.40
Foundry, Chicago, ovens	9.00
Foundry, New England, del.	11.50
Foundry, St. Louis	9.75
Foundry, Birmingham	5.00
Foundry, Indianapolis, del.	9.75
Foundry, Ashland, Ky.	7.50
Foundry, Portsmouth, O.	7.50
Foundry, Detroit, ovens	9.00
Foundry, Buffalo, ovens	9.00

Ferroalloys

Shipments Increase — Spiegeleisen Specifications Best in History

Pittsburgh, Feb. 14.—Specifications for ferroalloys are more active, especially for ferromanganese. Specifications now coming through apply on first half contracts at $100, Atlantic seaboard base. No spot market activity is noted. Ferrosilicon specifications are improving on $83.50 contracts. No sales have been reported recently in this district at the spot price of $88.50. Spiegeleisen producers had the best January business in their histories. This followed a heavy shipping month in December. Consuming rates now are higher. While $32 and $33 is wanted in the spot market, contract prices were lower.

New York, Feb. 14.—The Imperial Steel Works of Japan is taking bids on 500 tons of ferromanganese, 5 tons of nickel and 30 tons of aluminum for shipment in March and April.

Special ferroalloys are moving well on contracts. Tungsten is quiet, with wolframite ore about $10.25 to $10.50 a short ton unit, duty paid, and scheelite ore about $10.50. Ferrotungsten is quiet, at 92c to 93c a pound, contained.

Ferroalloy Prices

Ferromanganese, 78 to 82 per cent, tidewater, duty paid	$100.00
Ferromanganese, del. Pittsburgh	104.79
Spiegeleisen, 19 to 21 per cent domestic furnace	32.00
*Ferrosilicon, 50 per cent, freight allowed, carloads	83.50
*Do, less carload	88.50
Do, 75 per cent	130.00 to 150.00
Ferrochrome, 66-70 chromium, 4-6 carbon, cts. per lb. con., del.	11.00
Ferrotungsten stand. lb. cont.	93.00
Ferrovanadium, 30-40 per cent, per lb., contained, on analysis	3.15 to 3.65
Ferro-carbon-titanium carload producers plant, net ton	200.00
Ferrophosphorus, per ton, carload, 17 to 19 per cent, Rockdale, Tenn., basis (18 per cent)	91.00
Ferrophosphorus, electrolytic, per ton, carload, 23-25% f.o.b. Anniston, Ala. (24 per cent)	122.50

*Spot Prices $5 higher.

Trackwork Production Up

Production of trackwork for tee rail track of 60 pounds per yard and heavier in January totaled 9332 net tons, compared with 12,969 tons last January and 15,247 tons in January two years ago. The January figure, however, was a slight improvement over the 9139 tons of December, 1927, according to the American Iron and Steel institute. Revised annual production statistics for 1927 are 160,631 tons and for 1926, 197,005 tons.

Disposes of Gas Rights

Natural gas rights on 22,000 acres near Ashland, Ky., owned in fee simple by the American Rolling Mill Co., have been purchased by financial interests identified with the Hope Engineering & Supply Co., Mt. Vernon, O., and the Inland Gas Corp., for $3,000,000 cash. Included in the development rights was an agreement by which the Ashland works of the American Rolling Mill Co. will obtain an adequate supply of natural gas at favorable terms indefinitely.

Donner Profits Lower

Net profits for 1927 reported by the Donner Steel Co. Inc. and subsidiary were $372,193 after depreciation, interest, federal taxes, etc. This is only slightly more than one-half of the $736,607 net profit reported in 1926. In his report to stockholders, W. H. Donner, president, said that the rate of operations was lower than in 1926, especially in the last quarter. Profits on steel products have been extremely close, he said, and the net returns for the year represent an unsatisfactory showing on the capital investment.

The Canadian Car & Foundry Co., Montreal, Que., has received an order from the General Motors of Canada Ltd. for about 60,000 frames.

Plates

Heavy Specifications Develop at Chicago—Car Builders Active—Prices Are Steady

HEAVY specifications for plates at Chicago are the outstanding feature of the market. Demand from consumers previously protected by contracts is the largest in many weeks. Car builders are especially active. The United States engineers at Memphis are inquiring for barges requiring about 4000 tons of plates. Other business noted in the market is miscellaneous.

PLATE PRICES, PAGE 460

Pittsburgh, Feb. 14.—One large producer has made several plate sales at the new 1.85c price. Present transactions involve specifications against lower price contracts, but 1.85c is firm on new business. The latest inquiry for barges comes from the United States engineers at Memphis, involving 4000 tons. Six or ten 80,000-barrel tanks are understood to have been awarded Reeves Bros, at Birmingham. Riter-Conley Co. was awarded a barge, 325 tons, by the Mississippi river commission.

Philadelphia, Feb. 14.—Eastern plate mills are operating 60 to 70 per cent. Lukens Steel Co. has 11 open hearths on, owing to large orders booked in January. Demand from railroads is light.

Chicago, Feb. 14.—Specifications for plates are the heaviest in many weeks. This is due to the accumulation of specifications from recent car building orders and the demand of the building industry. Manufacturing lines are active, particularly in the Chicago industrial district. Recent heavy specifications are taxing the ability of mills to make early deliveries. Shipments have been further extended and now are four to six weeks on plates. Plate mill capacity is almost fully engaged. No announcement is made on second quarter prices. The present price is 1.95c, Chicago.

Cleveland, Feb. 14.—A lake shipyard still has 1000 tons of plates pending for a small sized ship. Demand for ship repair plates is fair. Larger plate users in the district have no large inquiries outstanding but have quoted on considerable work.

CONTRACTS PLACED

3000 to 5000 tons, six or ten 80,000-barrel tanks for a Texas oil company to Reeves Bros., Birmingham, Ala.

358 tons, Piedmont Print Works new mill building at Taylors, S. C., through Potter & Shackelford, Greenville, S. C., general contractors, to Southern Engineering Co.

325 tons, one mat barge for Mississippi river commission, Memphis, to Riter-Conley Co.

300 tons, pipe line project, Port Townsend, Wash., to Steel Tank & Pipe Co.

170 tons, bridgework for state highway commission, Michigan, to Massillon Bridge & Structural Co.

110 tons, 2-story addition to Stuart building, for Stuart Investment Co., Lincoln, Nebr., to Paxton & Vierling Iron Works.

100 tons, design, fabrication and erection of baseball grandstand for Augusta, Ga., to Southern Engineering Co.

Unstated tonnage, 75,000-gallon water tank on 75-foot tower for Albion state normal school, Boise, Ida.; to Pittsburgh-Des Moines Steel Co.

CONTRACTS PENDING

4000 tons, 35 100-foot barges for United States engineer, Memphis, Tenn.; bids close March 3.

2048 tons, Cedar Falls penstock, Seattle hydroelectric project; bids in Feb. 17.

1200 tons, pipe line for Tacoma, Wash.; bids to be taken soon.

400 tons, three months requirement for Southern Pacific Co., San Francisco; bids in Feb. 24.

250 tons, two steel hulls for concrete mixing plant for Mississippi river commission, Memphis, Tenn.; bids being compiled.

170 tons, plates for box cars for Western Pacific railroad Co.; bids in.

Will Install 100-Ton Furnace

Directors of the Otis Steel Co. have authorized the enlargement of the present open-hearth building, the construction of a 100-ton furnace and the installation of complete overhead equipment for two additional open hearths at its Riverside works, Cleveland. The present steelmaking facilities at this division of the company include five 100-ton open hearths with an annual rated capacity of 345,000 tons. Work on the new unit will start immediately.

Five steam railway passenger cars were received by Australia from the United States in October, and three went to Mexico.

Semifinished

Larger Demands Noted for Sheet Bars, Billets and Slabs—Readjustments Made in Valley

SHIPMENTS of sheet bars, billets and slabs are increasing. At Chicago a larger demand has developed for forging billets. Readjustments of sources of supply and consumption, following recent mergers in the valley district are the chief item of interest there. The majority of users are covered for the remainder of the first quarter, and prices continue on a steady basis.

SEMIFINISHED STEEL PRICES, PAGE 460

Pittsburgh, Feb. 14.—Occasional orders for semifinished steel are placed by nonintegrated mills with regular sources of supply. These are not open market transactions. Some strip mills covered on billets for February in January. Others who bought for January only have been buying for February, and shortly will close for March. March requirements will be somewhat heavier. Billets and slabs are $33 and smaller sizes $34, the same as sheet bars. Forging billets are a trifle more active on $38 contracts. No noteworthy wire rod business has been noted as yet at $44, but shipments are heavy against lower price contracts. Skelp is quiet but firm at 1.85c.

New York, Feb. 14.—Several sales of wire rods in carloads have been made here at $44, base, Pittsburgh. Most consumers are under cover at lower prices for first quarter shipment of rods.

Youngstown, O., Feb. 14.—Readjustments are taking place in both sources and consumption of semifinished steel products due to mergers or absorptions in this district. Now that Republic Iron & Steel Co. is preparing to complete absorption of the Trumbull Steel properties it has been shipping sheet bars in larger tonnage each week to Trumbull mills. This has released tonnage coming from other valley mills which now can be devoted to other lines. Since the Empire Sheet Corp. is about to be completed, this including merger of a half dozen independent sheet mills in eastern and northern Ohio, sheet bars are being shipped to Niles and elsewhere from the Mansfield, O., mills. Sheet bars are being sold in larger lots at $34, Pittsburgh and Youngstown. Billets and slabs are $33.

Cleveland, Feb. 14.—Specifications for sheet bars, billets and slabs have increased slightly over recent weeks. The leading merchant producer here has nine of its 14 open hearths active. Prices still are $33, Cleveland, for sheet bars, billets and slabs.

Chicago, Feb. 14.—Shipments of semifinished material have been increasing. Forging billets are active. Sheet bar shipments are fully up to January. Small billets, 4 x 4-inch base, are steady at $33, Chicago. Wire rods are reported firm at $45.

Iron and Steel Scrap Prices

Corrected to Tuesday noon. Delivered to Consumers.

Steel Works Scrap

HEAVY MELTING STEEL

Birmingham	10.65 to 10.75
Boston (dealers)	9.00 to 9.25
Buffalo, No. 1	15.25 to 15.50
Buffalo, No. 2	13.50 to 14.00
Chicago	12.50 to 13.00
Cincinnati (dealers)	11.50 to 12.00
Cleveland, No. 1	13.75 to 14.00
Cleveland, No. 2	13.25 to 13.50
Detroit, No. 1	11.25 to 11.75
Eastern Pennsylvania	13.50 to 14.00
Eastern Pennsylvania, No. 2	11.00 to 11.50
Bethlehem delivery	13.00 to 13.50
New York (dealers) (railroad)	10.00 to 10.85
New York (dealers) (yard)	7.00 to 7.50
Pittsburgh, No. 1	15.00 to 15.50
St. Louis	11.75 to 12.25
Valleys, No. 1	15.00 to 15.50

COMPRESSED SHEETS

Buffalo	13.75 to 14.25
Chicago	11.00 to 11.50
Cleveland	12.50 to 13.00
Detroit	10.25 to 10.75
Pittsburgh	14.25 to 14.75
Valleys	14.25 to 14.50

BUNDLED SHEETS

Buffalo	10.00 to 10.50
Cincinnati (dealers)	9.50 to 10.00
Cleveland	11.50 to 12.00
Eastern Pennsylvania	10.50 to 11.00
Pittsburgh	13.25 to 13.75
St. Louis	7.75 to 8.25

SHEET CLIPPINGS, LOOSE

Chicago	8.25 to 8.75
Cincinnati	8.75 to 9.25
Detroit	7.00 to 7.50
St. Louis	7.50 to 8.00

STEEL RAILS, SHORT

Birmingham	11.50 to 12.00
Buffalo	16.50 to 17.00
Chicago	15.50 to 16.00
Cincinnati (dealers)	16.00 to 16.50
Detroit	11.00 to 11.50
St. Louis	16.00 to 16.50

STOVE PLATE

Birmingham	13.00 to 14.00
Boston (consumers)	11.00
Buffalo	12.75 to 13.25
Chicago (net)	12.00 to 12.50
Cincinnati (dealers) net	9.00 to 9.50
Cleveland	12.00 to 12.50
Detroit (net tons)	10.50 to 11.00
Eastern Pennsylvania	12.50 to 13.00
New York (dealers) (mill)	8.25 to 8.50
Pittsburgh	12.50 to 12.75
St. Louis	13.50 to 14.00

LOW PHOSPHORUS

Buffalo, billet and bloom crops	16.75 to 17.25
Cincinnati (dealers)	13.00 to 13.50
Eastern Pennsylvania	17.50 to 18.50
Pitts. billet and bloom crops	18.50 to 19.00
Cleveland, billet, bloom crops	17.00 to17.50

SHOVELING STEEL

Chicago	12.50 to 13.00
Pittsburgh	11.00 to 11.50
St. Louis	11.75 to 12.25

KNUCKLES, COUPLERS, SPRINGS

Chicago	14.50 to 15.00
Eastern Pennsylvania	16.00 to 16.50
Pittsburgh	16.75 to 17.25
St. Louis	13.75 to 14.25
Buffalo	16.25 to 16.75

FROGS, SWITCHES, GUARDS

Chicago	14.00 to 14.50
St. Louis	14.00 to 14.50

ANGLE BARS—STEEL

Buffalo	14.50 to 15.00
Chicago	14.50 to 15.00
St. Louis, No. 2	13.75 to 14.25

Iron Mill Scrap

RAILROAD WROUGHT

Birmingham	11.00 to 12.00
Boston (dealers)	10.50 to 11.00
Buffalo, No. 1	12.25 to 12.75
Buffalo, No. 2	14.25 to 14.75
Chicago, No. 1	12.35 to 12.90
Chicago, No. 2	12.50 to 13.00
Cincinnati, No. 1 (dealers)	11.00 to 11.50
Cleveland, No. 1	11.50 to 12.00
Eastern Pennsylvania	15.00 to 15.50
New York, No. 1 (dealers)	11.00 to 11.50
Pittsburgh, No. 1	11.00 to 11.50
Pittsburgh, No. 2	15.00 to 15.50
St. Louis, No. 1	10.25 to 10.75
St. Louis, No. 2	11.75 to 12.25

WROUGHT PIPE

Boston (dealers)	8.00 to 8.50
Eastern Pennsylvania	13.00 to 13.50
Buffalo	12.00to 12.50
New York (dealers)	8.75 to 9.25

YARD WROUGHT

Boston	9.50 to 10.00
Eastern Pennsylvania	14.50 to 15.00

BUSHELING

Buffalo	13.75 to 14.25
Chicago, No. 1	10.50 to 11.00
Chicago, No. 2	8.50 to 9.00
Cincinnati, No. 1 (dealers)	10.50 to 11.00
Cincinnati, No. 2	7.00 to 7.50
Cleveland, No. 2	10.25 to 10.75
Pittsburgh, No. 1	12.00 to 12.50
St. Louis, No. 1	10.25 to 10.75

MACHINE SHOP TURNINGS

Birmingham	8.00 to 9.00
Boston	6.00 to 6.25
Buffalo	9.50 to 10.00
Chicago	8.00 to 8.50
Cincinnati (dealers)	8.50 to 9.00
Cleveland	9.00 to 9.25
Detroit	7.00 to 7.25
Eastern Pennsylvania	11.00 to 11.25
New York (dealers)	7.00 to 7.50
Pittsburgh	10.00 to 10.50
St. Louis	7.75 to 8.25

CAST IRON BORINGS

Birmingham (chemical)	13.00 to 13.50
Birmingham (plain)	8.00 to 9.00
Boston (chemical)	9.50 to 10.00
Boston (dealers)	6.50 to 7.50
Buffalo	10.25 to 10.75
Chicago	10.25 to 10.75
Cincinnati (dealers)	8.75 to 9.25
Cleveland	10.25 to 10.75
Detroit	8.25 to 8.50
Eastern Pennsylvania	11.00
Eastern Pennsylvania (chem.)	15.00 to 15.50
New York (dealers)	6.75 to 7.35
Pittsburgh	11.00 to 11.50
St. Louis	9.25 to 9.75
Valleys	13.50

MIXED BORINGS AND TURNINGS

For blast furnace use

Boston (dealers)	5.75 to 6.00
Buffalo	10.25 to 10.75
Cincinnati (dealers)	8.75 to 9.25
Cleveland	10.25 to 10.75
Detroit	8.00 to 8.25
Eastern Pennsylvania	10.00 to 11.00
New York (dealers)	6.75 to 7.35
Pittsburgh	11.00 to 11.50

PIPES AND FLUES

Chicago (net)	8.50 to 9.00
Cincinnati (dealers)	8.00 to 8.50
St. Louis	9.50 to 10.00

RAILROAD GRATE BARS

Buffalo	10.75 to 11.25
Chicago (net)	12.25 to 12.75
Cleveland	12.00 to 12.50
Eastern Pennsylvania	12.50 to 13.00
New York (dealers)	8.25 to 8.75
St. Louis	12.00 to 12.50

FORGE FLASHINGS

Boston (dealers)	7.00 to 7.25
Buffalo	11.00 to 11.50
Chicago	9.50 to 10.00
Cleveland (over 10 in.)	12.50 to 13.00
Detroit	9.50 to 10.00
Pittsburgh	13.50 to 14.00

FORGE SCRAP

Boston (dealers)	6.00 to 7.00
Chicago	15.50 to 16.00
Eastern Pennsylvania	10.50 to 11.00

ARCH BARS AND TRANSOMS

Chicago (net)	18.50 to 19.00
St. Louis	21.00 to 21.50

Iron and Steel Works Scrap

AXLE TURNINGS

Boston (dealers)	6.75 to 7.00
Buffalo	13.00 to 13.50
Chicago	10.25 to 10.75
Cleveland	12.00 to 12.25
Eastern Pennsylvania	12.00 to 12.50
Pittsburgh	13.00 to 13.50
St. Louis	10.00 to 10.50

STEEL CAR AXLES

Birmingham	16.00 to 17.00
Boston (shipping point)	15.50 to 16.00
Buffalo	16.75 to 17.25
Chicago	17.90 to 18.50
Cleveland	16.00 to 16.50
Eastern Pennsylvania	21.00 to 22.00
Pittsburgh	18.00 to 18.50
St. Louis	20.00 to 20.50

SHAFTING

Boston (shipping point)	13.00 to 13.50
Chicago	16.80 to 17.35
Eastern Pennsylvania	17.50 to 18.00
New York (dealers)	14.00 to 14.50
St. Louis	17.00 to 17.50

Iron Foundry Scrap

CAR WHEELS

Birmingham, iron	14.00 to 15.00
Boston (consumers)	14.00 to 14.50
Buffalo, iron	13.25 to 13.75
Buffalo, steel	16.00 to 16.50
Chicago, iron	14.25 to 14.75
Chicago, rolled steel	15.50 to 16.00
Cincinnati	12.50 to 13.00
Eastern Pennsylvania	15.50 to 16.00
New York iron (dealers)	12.00
Pittsburgh, iron	14.75 to 15.25
Pittsburgh, steel	16.75 to 17.25
St. Louis, iron	14.25 to 14.75
St. Louis, steel	14.25 to 14.75

NO. 1 CAST SCRAP

Birmingham, cupola	14.00 to 14.50
Boston	14.50 to 15.50
Buffalo	14.50 to 15.00
Chicago, No. 1 machinery	15.75 to 16.25
Chicago, No. 1 railroad	14.85 to 15.40
Chicago, No. 1 agricultural	14.55 to 15.10
Cincinnati No. 1 machinery cupola (net tons dealers)	14.50 to 15.00
Cleveland, cupola	16.50 to 17.00
Detroit (net tons)	12.25 to 12.75
Eastern Pennsylvania (cupola)	16.50 to 17.00
New York, cupola (dealers)	13.50
Pittsburgh, cupola	14.50 to 15.00
San Francisco, delivered	20.00 to 21.00
Seattle	14.50 to 14.75
St. Louis, railroad	13.50 to 14.00
St. Louis, agricultural	13.50 to 14.00
St. Louis, machinery	14.00 to 14.50
Valleys	16.50 to 17.00

HEAVY CAST

Boston	10.50 to 11.00
Buffalo (breakable)	11.50 to 12.00
Cleveland	12.50 to 12.75
Detroit (automobile) (net tons)	20.00 to 21.00
Eastern Pennsylvania	15.50 to 16.00
New York (dealers)	11.75 to 12.00
Pittsburgh	13.50 to 14.00

MALLEABLE

Boston, railroad	13.00 to 13.50
Buffalo	15.25 to 15.75
Chicago, agricultural	11.75 to 12.25
Chicago, railroad	13.00 to 13.50
Cincinnati, railroad (dealers)	12.50 to 13.00
Cincinnati, agricultural (dealers)	12.25 to 12.75
Cleveland, agricultural	15.00 to 15.50
Cleveland, railroad	15.50 to 16.00
Detroit, auto	14.50 to 15.00
Pittsburgh, railroad	14.50 to 15.00
St. Louis, agricultural	12.50 to 13.00
St. Louis, railroad	12.50 to 13.00

Miscellaneous Scrap

RAILS FOR ROLLING

5 feet and over

Birmingham	13.50 to 14.00
Boston (dealers)	10.00 to 10.50
Buffalo	14.50 to 15.00
Chicago	15.00 to 15.50
Eastern Pennsylvania	15.25 to 15.50
New York	11.00 to 12.00
Pittsburgh district	16.25 to 16.75
St. Louis	14.25 to 14.75

LOCOMOTIVE TIRES

Chicago, No. 1	14.00 to 14.50
Chicago, cut	16.00 to 16.50
St. Louis, No. 1	12.50 to 13.00

LOW PHOSPHORUS PUNCHINGS

Chicago	14.00 to 14.50
Pittsburgh	16.50 to 17.00

Scrap

Current Buying in Small Lots, Without Tonnage Inquiry—Bethlehem Only Large Buyer

BUYING of iron and steel scrap for the most part is only for immediate needs and in small lots. Many melters are depleting reserves and thus are out of the market. Bethlehem Steel Co. has taken a large tonnage of heavy melting steel recently, but this is the only large buying. Prices are easier and in some cases slightly lower than recently.

Chicago, Feb. 14.—Much inquiry is out for scrap tonnages for immediate needs. Sales are brisk, but usually in small lots. Speculation by dealers has nearly disappeared and sellers are not inclined to hold back for higher prices when orders can be taken. This tends toward relaxation of recent strength. Some believe the market is slightly easier, although this has not been reflected in prices paid by consumers in recent sales. Trading in heavy melting steel is at $12.50 to $13. No important consumer tonnage of this grade has been sold recently.

Philadelphia, Feb. 14.—Bethlehem Steel Co. has been a heavy buyer of iron and steel scrap. It is understood this interest has placed at least 100,000 tons during the past couple of weeks. The market is quoted at $13.50 to $14, delivered Bethlehem, for No. 1 heavy melting steel and at $10.50 to $11 for blast furnace borings and turnings.

Pittsburgh, Feb. 14.—While scrap consumption is increasing, consumer orders are rare. Dealers continue to cover and some were paying $15 today. Some sellers will not quote less than $15.50 and indicate that as their minimum on inquiries. Some have paid $14.50 at an Ohio river point to apply against a $15 order taken some time ago. Blast furnace and cast grades all are quiet. A few sales of specialties to steelworks, up to 500 tons, have been noted again this week at $17.25.

Buffalo, Feb. 14.—Steelworks are taking large deliveries of heavy melting steel on contracts but there is no tonnage buying. Some materials which have been quiet have begun to move, notably low phosphorus and railroad malleable.

Cleveland, Feb. 14.—Buying of iron and steel scrap is restricted, with supply in excess of demand. Some steelmakers have not been forced to enter the market actively because of the quantity of their own scrap, despite the upturn in operations. Several companies involved in recent mergers are working off supplies before the consolidations become effective.

Prices are moving within a narrow range and generally are unchanged. Slight weaknesses are noted in cast iron borings, No. 2 busheling and shovel turnings, all of which are quoted down 25 cents a ton at the lower end of the former range of $10.50 to $10.75. Dealers are paying $13.75 to $14 for No. 1 heavy melting steel.

Detroit, Feb. 14.—While heavy melting steel is unchanged at $11.25 to $11.75 and some sellers believe it will advance as open hearth consumption expands, other iron and steel scrap continues weak. Lighter grades, especially borings and turnings, reflect the latter tendency, as blast furnaces have restricted their purchases. The supply of scrap is heavier although the rate of increase is not so great as last month. Machine shop turnings, mixed borings and turnings and loose sheet clippings are lower.

Cincinnati, Feb. 14.—While price changes have not materialized, iron and steel scrap is in better state of mind than last week when some prices were marked back. A number of inquiries have come out in 300 to 500-ton lots. Some sales have been made and more are pending. Foundries are inquiring as to price and report better prospects ahead.

St. Louis, Feb. 14.—Iron and steel scrap still suffers from excess of offerings. Prices have declined further, and buying is negligible. Consumption is on a liberal scale, but less than offerings. Heavy melting and shoveling steel declined to a minimum of $11.75. Steel angle bars, iron car wheels, locomotive tires, rails for rolling, axle and tire turnings, and all grades of malleable are lower.

Birmingham, Ala., Feb. 14.—Iron and steel scrap is in plentiful supply, with most demand for heavy melting steel, stove plate and No. 1 cast. Prices are unchanged.

New York, Feb. 14.—Following some substantial consumer buying earlier in the month iron and steel scrap is quiet and prices are unchanged. While some dealers look for improvement early in March others see little change before April.

Schwab Awarded Medal

Charles M. Schwab, chairman of Bethlehem Steel Corp., Bethlehem, Pa., has been awarded the bessemer gold medal by the council of the Iron and Steel institute in London. The award is made for recognition of outstanding services in the advancement of the manufacture of iron and steel.

Sheets

Shipments and Operations Show Improvement—Makers Seeking to Establish Higher Prices

SHEET specifications are increasing and operations are better. All consuming lines show improvement, although automotive demand has not expanded as fully as anticipated. Sheetmakers have opened their books for second quarter, and have named prices identical with those put out for first quarter, but which were not fully established.

SHEET PRICES, PAGE 460

New York, Feb. 14.—In several instances important consumers have specified all tonnage due them on first quarter sheet contracts. Mills generally take the attitude that any additional tonnage will have to be placed at present prices, although this is not true in all cases. Some mills have reached a point where they can pick their business.

Detroit, Feb. 14.—Sheet mills generally are quoting 2.90c, Pittsburgh, on black, 3.75c on galvanized, 2.10c on blue annealed and 4.15c on autobody for all new business and on second quarter contract tenders, but so far as is known little or no business has been closed at these levels. Practically all sheet users, covered by first quarter contracts, are specifying black at 2.65c, galvanized at 3.65c and auto body at 4.00c. Several large automotive users will shortly close on their second quarter black and autobody requirements. Shipments into this district in February are falling slightly short of January totals. Ford Motor Co. is not yet in production and is buying accordingly. Many automotive makers are slightly reducing their schedules as January production was largely for dealers' stock and these cars must be moved before better operations are scheduled.

Buffalo, Feb. 14.—Orders for automobile sheets are coming from consumers in increasing quantities. Prices have steadied with 4.15c, base, Pittsburgh, now generally the minimum. Black sheets are 2.90c and galvanized 3.75c.

Chicago, Feb. 14.—Mills in this district announce the opening of books for second quarter at present prices.

Specifications have come in more freely in the past ten days.Operations of the leading independent again are at capacity this week, making district operations average close to 75 per cent. Chicago delivered prices for second quarter will continue at 3.05c for No. 24 black; 3.90c for No. 24 galvanized; and 2.25c to 2.35c for No. 10 blue annealed.

St. Louis, Feb. 14.—Sheet demand is broadening. While volume has not increased heavily, sales are being made to a greater variety of users. Further improvement in specifications from car and automobile builders is noted. Prices are unchanged.

Pittsburgh, Feb. 14.—Since the opening of second-quarter books by sheetmakers last week, specifications have been increasing, and scattered tonnages have been booked for second quarter, including one or two lots of full finished, blue annealed and single-pickled sheets. Sheetmakers reaffirmed the prices originally named for first quarter but which suffered setbacks because of need for tonnage. The new prices are $2 or more per ton higher than the levels obtained in the first quarter. They are 2.10c on No. 10 blue annealed, plus 10.00c per 100 pounds on material 40 inches or wider; 2.90c on No. 24 gage black; 3.75c on No. 24 gage galvanized; 4.15c on No. 20 gage full finished; 4.10c on long ternes; and 3.00c on No. 28 gage tin mill black. Sheetmakers in this vicinity note a vastly improved condition among consumers of their products, although it is admitted that automotive customers still are far from normal. Sheet mill operations continue 75 to 80 per cent.

Youngstown, O., Feb. 14.—Broadening demand for various grades of sheets is spreading to barrelmakers, stampers and warehouse interests which had allowed stocks to run low. Some makers of auto parts in Michigan are so pressed for certain sizes as to turn to trucking from Detroit warehouses to fill emergencies in odd sizes. The new autobody sheet price of 4.15c, Pittsburgh, is being accepted by some consumers on new business. Since makers of tin mill black sheets have advanced prices by $2 a ton to 3.00c, Pittsburgh, and 3.10c, Gary, this has added more firmness to the general sheet market around 2.90c for common black, 2.10c for blue annealed and 3.75c for galvanized. Every independent sheet plant in the valley is working this week, with 111 units active out of a total of 127; or 87 per cent compared with 71 per cent last week and 82 per cent three weeks ago.

Cleveland, Feb. 14.—Specifications for steel sheets received by mills from manufacturers in the past week were fewer and lighter than in the preceding weeks. Failure of automotive builders to release shipments of parts on order have dammed up stamping manufacturers with finished and semi-finished products and have hindered their further specifications for sheets. Books have been opened for second quarter by some producers at the prevailing prices of 2.90c, Pittsburgh, on black, 2.10c, on blue annealed, and 3.75c on galvanized. Buyers show little interest in making commitments beyond March 31. Autobody at 4.15c, Pittsburgh, as yet is untested.

Tin Plate

Specifications Continue Active—Market Is Firm

TIN PLATE PRICES, PAGE 460

Pittsburgh, Feb. 14.—Some of the larger tin plate producers have worked out anticipated tonnage, which has been shipped and paid for. They now depend on specifications from day to day and these still are active. No new business is developing because consumers have booked up their estimated first half requirements. The general expectation is that the 1928 food packs will be heavy and additional supplies of tin plate will have to be bought later in the second quarter. American Sheet & Tin Plate Co. operated 77 per cent of its tin mills last week, with Jones & Laughlin Steel Corp., Bethlehem Steel Corp., Weirton Steel Co. and other independents operating practically full. The average of operation is 80 to 85 per cent. The price is firm at $5.25. Tin mill black sheets are 3.00c, no more being available at 2.90c.

New York, Feb. 14.—Demand for tin plate against contracts is reported as better than the usual February rate, and mills say indications are that shipments in March and April will be heavy. The usual prices on stock tin plate are $4.75, base, Pittsburgh, to jobbers and $4.65 to consumers, although odd lots occasionally go lower.

The treasury department at Washington has sanctioned a drawback on steel barrels made by Boyle Mfg Co., Los Angeles and Alameda, Calif., from imported sheets.

Pipe

Jobber Buying Spotty but Mills Hold 60 to 70 Per Cent Operations—Cast Demand Slow

SEVERAL gas lines are under negotiation and one oil line in the Middle West is expected to require 150,000 tons of steel pipe. Orders are scarce for line pipe. Merchant pipe demand from jobbers is spotty but orders are more numerous than in January. Cast pipe demand is dull, few large transactions being noted. French makers underbid domestic $2 a ton on 2000 tons at Detroit.

PIPE PRICES, PAGE 460 AND 494

Pittsburgh, Feb. 14.—Miscellaneous orders for standard full weight merchant pipe from jobbers are more numerous than in January. Few jobbers carry heavy stocks but order occasional carloads to keep abreast of the turnover. Not much promise is contained in the outlook for oil country goods. The potentialities of the oil industry this year are about the same as last. Occasional small orders are placed for various grades, including seamless casing, but oil line pipe orders are scarce. Gas lines continue to hold the center of the stage and interest is centered chiefly in a long 20 or 22-inch line from Monroe, La., to St. Louis, sponsored by Standard Oil Co. of New Jersey. It has been confirmed that construction of this will start possibly in two months, and at present it is planned to install a branch line to Memphis, Tenn. Gas companies generally are looking for outlets and this brightens hopes of pipe mills, operating at 60 to 70 per cent.

Humble Pipe Line Co. is surveying for a line from the Lytle pump station, 20 miles south of San Antonio, Tex., to Webster on Galveston bay, below Houston—213 miles.

New York, Feb. 14.—The steel pipe market here is featured by heavy tonnage negotiations in connection with oil lines for the Middle West. One project now under negotiation involves about 150,000 tons. European makers are making a strong bid for some of this oil pipe business in this country and it is understood some tonnage has gone to them, for shipment to a Gulf port. Several lots of oil line pipe placed in the several weeks involve up to 2000 tons each.

Chicago, Feb. 14.—French cast iron water pipe entered into competition with domestic pipe in the bids received by Detroit Feb. 10 for 2000 tons of 24-inch. Most bids of domestic producers were around $30, base, Birmingham, the lowest domestic bid being $29.75. It is understood that the bid of the French pipe sellers was about $2 a ton lower. The award probably will be made Feb. 15. No other important municipal tonnage has come out. Most producers are booked only a short period ahead. Winter pipe buying has been disappointing thus far, but favorable weather may bring out more tonnage. Contract orders are fairly numerous. This business is moving in a range of $28 to $30, Birmingham.

Birmingham, Ala., Feb. 14.—Lettings for cast iron pressure pipe still are being received while the soil pipe market is somewhat disturbed by keen competition and price cutting. Production of pressure pipe is 75 to 80 per cent of capacity with increased

output seen for the next 60 days. Quotations for pressure pipe are $28 to $30 per ton, base, 6-inch and over sizes.

New York, Feb. 14.—Cast iron pipe demand is quiet in this district. Prices are asy. One average lot of ordinary specifications for a New England municipality was closed at $26.92, Birmingham equivalent.

CONTRACTS PLACED

1000 tons, 6 to 16-inch cast pipe for Newark, N. J., awarded through general contractor, to United States Cast Iron Pipe & Foundry Co.

2000 tons, pipe for New Haven Water Co., New Haven, Conn., reported going to Warren Foundry & Pipe Co.

800 tons, 48-inch pipe for New Bedford, Mass., to United States Cast Iron Pipe & Foundry Co.

600 tons, 6 to 12-inch pipe for Portsmouth, O., to American Cast Iron Pipe Co.

369 tons, 4 to 8-inch Class B, improvement of streets in Paradise Hills, San Diego, Calif., to United Concrete Pipe & Construction Co.

154 tons, 4 to 8-inch class B, Chehalis, Wash., to Pacific States Cast Iron Pipe Co.

153 tons, 6 to 10-inch class B, improvement to Main street, San Diego, Calif., general contract to Butterfield Construction Co., that city.

Unstated tonnage, monocast centrifugal pipe, for Madison, Wis., to American Cast Iron Pipe Co., at $24,052.

CONTRACTS PENDING

3095 tons, 4 to 12-inch class B, southgate, Calif.; bids in Feb. 21.

2000 tons, 24-inch class B pipe for Detroit; award to be made soon.

222 tons, 4 to 8-inch class B, Armona, Calif.; bids in soon.

217 tons, 6 to 10-inch class B, improvement to Long Beach boulevard, Lynwood, Calif., general contract to O. U. Miracle, San Diego, Calif.

156 tons, 4 to 8-inch class B, improvement to Pacific street, Oceanside, Calif.; bids opened.

137 tons, 4 to 10-inch class 150, Modesto, Calif.; bids postponed from Feb. 8 to Feb. 23.

119 tons, 8-inch class B, Eureka, Calif., to B. Nicoll & Co., for French pipe.

Iron Ore

Market Not Yet Opened for 1928—Dock Balance Lighter

IRON ORE PRICES, PAGE 489

Cleveland, Feb. 14.—New business for 1928 has not yet developed in the Lake Superior iron ore market. Stocks of iron ore on Lake Erie docks Feb. 1 were 404,124 tons less than on Feb. 1, 1927, as reported by the Lake Superior Iron Ore association in the following:

	Receipts	Shipments	Dock balance Feb. 1
Buffalo	3,924,081	135,275	6,012
Erie	1,146,479	1,167,574	67,948
Conneaut	8,129,859	7,652,268	1,725,983
Ashtabula	7,154,052	6,929,714	2,177,365
Fairport	1,902,168	1,794,705	395,595
Cleveland	8,295,971	5,437,413	1,223,748
Lorain	3,520,023	1,803,439	173,797
Huron	1,175,294	1,202,639	434,044
Toledo	1,304,864	584,131	83,507
Total	36,552,791	26,707,158	6,288,000
Total one year previous	42,287,063	31,050,238	6,692,124

Bars

Users Take Steadily Larger Tonnages—Deliveries Becoming Further Deferred—Prices Firm

PRODUCERS of soft steel bars find demand heavier than January and specifications are much in excess of production. This is deferring delivery, which now is considerably later than last month. Second quarter prices have not been announced. Automotive activity is an important cause of present heavy movement. Rail steel bars show moderate activity.

BAR PRICES, PAGE 460

Chicago, Feb. 14.—Specifications for bars, as well as other finished products, are showing important gain over January. Since the first of the year they are nearly double shipments and now are ahead of production. One producer finds shipments about 25 per cent ahead of January. Car building specifications are reflected in the present activity and general manufacturing lines are active. Implement and tractor business continues heavy. Cold finishers are important consumers also. With specifications ahead of the bar mill output deliveries have been extended to four to six weeks.

Second quarter prices probably will not be announced before early next month. Larger business is taken at 1.95c, Chicago, while mills ask 2.05c for lots under 100 tons.

Rail steel bars are moderately active from the manufacturing trade. The fence post business will not be active before March. Rail steel bars are unchanged at 1.80c to 1.85c.

The price of bar iron has been advanced $1 to 1.95c, Chicago. Buying of bar iron is for immediate shipment, and mills have no important backlogs. Railroad and farm implement makers are the chief sources of demand.

Boston, Feb. 14.—Most mill representatives find good bookings developing, indicating that consumers are looking for gradual improvement. Prices rule firm at 1.85c to 1.90c, base, Pittsburgh.

New York, Feb. 14.—Demand for steel bars in the East is less although the heavy buying in the West prevents weakness here. It is of interest to note that 1.85c, base, Pittsburgh, has been obtained in the past week on some important new tonnage here. Mills which ship to this territory appear to be maintaining operations at 60 to 70 per cent.

Buffalo, Feb. 14.—Bar prices have stiffened to a minimum of 1.95c, Lackawanna. Buying of ordinary and alloy steel bars is gaining steadily. Operations are at 81 per cent of capacity.

Pittsburgh, Feb. 14.—Merchant steel bar specifications continue to expand and spot transactions at the new 1.85c price are growing somewhat with the larger producers. Bar mill operations are mounting as demand broadens. In some cases, bar mills average 80 or 85 per cent. On some sizes deliveries are not as easy as a few weeks ago and now are at least 10 days to two weeks deferred. If specifications continue at the rate enjoyed during the past two weeks it will not be long until three or four weeks' dating will prevail. This betterment is traceable to improvement in the automotive industry, with other consumers, including agricultural implement makers, taking at least normal quotas for this season.

Detroit, Feb. 14.—Soft steel bar sales with some makers do not quite equal January but shipments are heavier than last February. Many forging plants are operating at capacity. Movements to warehouses is somewhat heavier. Because the automotive situation is more spotty than 30 days ago shipments may taper off the end of this month. Most buyers of bars are receiving shipments against 1.80c, Pittsburgh, contracts but 1.85c is being obtained on small lots of new business.

Youngstown, O., Feb. 14.—More satisfactory volume of steel bar business is coming to mills here. This demand is broadening into various consuming lines, leading off with the cold-drawn industry, but others also are specifying liberally. This has enabled local bar mill operations to expand this week substantially, with also an accumulation of something in the way of orders approaching a backlog. The price of 1.85c, Pittsburgh, is probably the firmest in all the finished steel lines.

Cleveland, Feb. 14.—Automotive requirements continue to lead bar demand, makers of small cars being relatively the best buyers. For some sellers of bars February demand equals the level of January, but with others a slight recession in fresh buying though not in specifying is noted. Bar deliveries by Pittsburgh district mills are somewhat deferred. Bolt, nut and rivet makers are taking bars commensurate with 70 per cent operations. Bars are 1.85c, Pittsburgh or Cleveland mill, though most specifications are against 1.80c contracts.

Philadelphia, Feb. 14.—Steel bar demand is somewhat better in the past week. It is considered likely that the February total of some mills in this district will be not much below January. The market is firm at 1.85c, Pittsburgh.

Structural Shapes

Chicago Prospects Begin to Materialize with 19,000-Ton Civic Opera Award—Spring Building Programs Nearer—Prices Steady

AWARDING of 19,000 tons for the Chicago Civic Opera building in Chicago featured structural steel activity of the past week. This is the first materialization of the heavy building program in Chicago involving more than 200,000 tons of structurals. Generally other contracts of the week were for small tonnages.

Inquiries include 10,000 tons of new work developed in the Chicago territory. The New York News building will require from 12,000 to 15,000 tons. A number of heavy projects are being launched quietly. Plain material prices remain untested as mill shipments continue against first quarter contracts and little tonnage is being placed in the open market. Fabricated quotations continue subject to severe competition.

STRUCTURAL SHAPE PRICES, PAGE 460

Chicago, Feb. 14.—More than 25,000 tons of structural steel was awarded during the week, including 19,000 tons for the Chicago Civic Opera building, reported let to an unstated fabricator. Close to 10,000 tons in fresh inquiry also has appeared. The building outlook continues unusally bright. An injunction suit filed by the owner of a small hotel occupying part of the site of the proposed Steuben club is expected to delay the award of 4000 tons for that job. Specifications from fabricators in the past ten days have been the heaviest in many months, mills report. Sales are keeping up with the output, while specifications are considerably ahead of production. Shipments of plain material have been extended to three to six weeks. The 1.95c, Chicago, price is named for new business, and mills report they are able to obtain 2.05c for small lots.

Philadelphia, Feb. 14.—Numerous structural steel projects are being bid here indicating considerable activity in the next several months. Actual lettings however are slow. Shape demand continues under the December-January rate, but eastern mills maintain operations around 80 per cent. The usual price is 2.13c, delivered Philadelphia, although $2 a ton less is done on some exceptional business.

Pittsburgh, Feb. 14.—Small structural shape awards have been the only lettings in the past two or three weeks. Fabricating shops here are fairly active but new bookings are deferred. Inquiries are increasingly plentiful and all estimating departments are busy. Estimates made last week were 50 per cent larger than any other week of the year. The open market price on plain material is 1.85c.

January construction contracts let in the Pittsburgh district amounted to $28,345,200, a decline of 33 per cent from December and 43 per cent from January, 1927. Contemplated construction reported for the Pittsburgh district in January amounted to $93,125,300, a gain of 42 per cent over December and of 11 per cent over last January.

Detroit, Feb. 14.—Recent structural awards have not been heavy but as much work is on architects' boards as at any time in the past year. The stiffening tendency in the price of plain material is providing the necessary impetus in some cases. Projects which should develop into awards in the near future include 4000 tons for a plant at Ottawa, Ill., for the National Plate Glass Co., a subsidiary of Fisher Body; 700 tons for the Plotkin hotel, and 1500 tons for a bank building at Lansing, Mich. The Detroit-Windsor tunnel will call for an unstated tonnage of shapes, while the proposed addition to the Tuller hotel will call for about 4000 tons. Mills are quoting 1.85c, Pittsburgh, on plain material.

New York, Feb. 14.—Structural activity is fairly brisk. Included in new inquiry are two large projects expected to be announced shortly. Substantial work continues in prospect.

While the shape market appears firm at 2.145c, New York, fabricated material prices continue unsettled.

According to the Structural Steel Board of Trade structural bookings in the metropolitan district in January aggregated 30,204 tons, compared with 36,918 tons in December. This is exclusive of bridges, piers, and subways, and compares with 51,000 tons in January, 1927, and 16,000 tons in January, 1926, when heavy contracting in the preceding fall due to change in the method of quoting and estimating by leading fabricators made for unusual dullness several months following.

A $7,000,000 toll bridge will be constructed within a year between Penn's Grove, N. J., and Wilmington, Del. This was announced by a former speaker of the New York state assembly, Anthony J. Siracusa, Atlantic City, who is one of the interests sponsoring the project.

Cleveland, Feb. 14.—Numerous small lots are active in the structural steel market, some fabricators and mills having on the pending list a total of over 100 projects. Contracts of 100 tons or more are limited in number. Plain material prices are steady at 1.85c, Pittsburgh, or 2.04c, Cleveland, on new commitments. Fabricated prices continue subjected to severe pressure on attractive work.

Awards Compared

	Tons
Awards this week	59,348
Awards last week	37,690
Awards two weeks ago	68,687
Awards this week in 1927	38,311
Average weekly awards, Jan.	31,359
Average weekly awards, 1928	53,467
Total awards to date, 1927	276,943
Total awards to date, 1928	320,604

CONTRACTS PLACED

19,000 tons, Chicago Civic Opera building, Chicago, reported awarded unstated fabricator. Formal award to be announced shortly.

16,000 tons, railroad and highway bridge over Mississippi river at Vicksburg, Miss., 11,000 tons to American Bridge Co., 5000 tons to Virginia Bridge & Iron Co., as announced Feb. 2.

8000 tons, new Sixteenth street viaduct at Milwaukee, to Julius C. Theilacker, 5924 Washington boulevard, Milwaukee, at $747,300 for fabrication and delivery only; bids on erection later. Other bidders: Worden-Allen Co., $817,000; Bethlehem Steel Co., $848,219; Milwaukee Bridge Co., $855,674; Lakeside Bridge & Steel Co., $868,990.

4500 tons, portion of Cathedral of Learning, Pittsburgh, to McClintic-Marshall Co.

2300 tons, printing building, 247 East Forty-fifth street, New York, reported awarded unnamed fabricator.

2000 tons, hotel for the Harper organization, Forty-ninth street and Lexington avenue, New York, reported awarded unstated fabricator.

1800 tons, Sheridan Towers apartment hotel, Chicago, to Hansell-Elcock Co.

1600 tons, loft, Eighth avenue and Forty-eighth street, New York, to Harris Structural Steel Co.

1550 tons, state bridges in New Hampshire, 1200 tons, to American Bridge Co. and 350 tons to Boston Bridge Works.

1500 tons, apartment, New York, to Easton Structural Steel Co.

1000 tons, addition to Bennings power plant, Potomac Electric Power Co., Washington, to Jones & Laughlin Steel Corp., through Stone & Webster, Inc.

900 tons, Empire Mortgage Co. building, Fifth avenue, New York, to Hay Foundry & Iron works.

600 tons, building for the government, Cristobal, Panama Canal, to Stupp Bros. Bridge & Iron Co., St. Louis.

550 tons, work for New York Central railroad terminal, New York, to Taylor-Fichter Steel Construction Co.

500 tons, bridge across Brazos river, for Texas, to Missouri Bridge & Iron Co.

400 tons, telephone office building, Philadelphia, to Shoemaker Bridge Co.

400 tons, foundry, Taylor, S. C., to Southern Engineering Co.

380 tons, miscellaneous work in the Pittsburgh district including 200 tons for Kuhn recreation building, East Liberty, Pittsburgh, through Conley & DeMey, general contractors, to Guibert Steel Co.

350 tons, theater, Philadelphia, to Bethlehem Fabricators Inc.

350 tons, plant building for Naylor Spiral Pipe Co., Chicago, to Midland Structural Steel Co.

350 tons, building for Marquette Cement Co.,

at La Salle, Ill., to Rock Island Bridge Co.
325 tons, steel wharf boat for Burlington Dock board, Burlington, Iowa, to St. Louis Steel Construction Co.
300 tons, Ninth Bank and Trust building, Philadelphia, to Bethlehem Fabricators Inc., noted last week as unstated building.
300 tons, building for Cary Brick Co., Cary, Ill., to Hansell-Elcock Co.
300 tons, Mayview hospital buildings, Pittsburgh, to John Eichleay Jr. Co.
263 tons, apartment, Pacific and Laguna streets, San Francisco, to McClintic-Marshall Co.'s Central works.
200 tons, Olney Foundry Co. building, Philadelphia, to Belmont Iron Works.
150 tons, American Gas association building, Cleveland, through DeHamel Construction Co., reported awarded unstated fabricator.
130 tons, apartment, Gough and Fern streets, San Francisco, to Golden Gate Iron Works.
100 tons, theater at Downers Grove, Ill., to Midland Structural Steel Co.
100 tons, miscellaneous work in Pittsburgh area including glass plant at Clarksburg, W. Va., to Pittsburgh Bridge & Iron Works.
Unstated tonange, Marine hospital, Cleveland, thorugh John Grant & Son, that city. general contractors, to John Eichleay Jr. Co.
Unstated tonnage, Wauwatosa, Wis., 1,000,000-gallon elevated steel tank, to Pittsburgh-Des Moines Steel Co., at $73,900. Chicago Bridge & Iron Co. only other bidder at $78,500.

CONTRACTS PENDING

12,000 to 15,000 tons, 20-story New York News building, East Forty-second street, New York; general contract awarded Hegeman-Harris Co., 360 Madison avenue, New York.
4000 tons, Hotel Tuller addition, Detroit; bids to be asked soon.
4000 tons, bridge for Union Pacific railroad over Arkansas river, Little Rock, Ark.; steel bids soon.
3000 tons, building for R. J. Reynolds Tobacco Co., Winston-Salem, N. C.
3000 tons, C. B. Connelley trade school, board of education, Pittsburgh; bids to be asked soon.
2100 tons, building extension to house three additional open hearths for Otis Steel Co., Cleveland; bids being taken.
1500 tons, department of agriculture building, Washington; previously noted as unstated tonnage.
1000 tons, plant building for Pittsburgh Plate Glass Co., Creighton, Pa.; bids about to be asked.
900 tons, bridge approach at Chicago river and LaSalle street, Chicago.
800 tons, sheet piling for Coyote Point Bridge across San Francisco bay; inquiry withdrawn.
750 tons, theater building for Stanley-Clark interests, Pittsburgh; bids about to be asked.
728 tons, Whitehouse crossing, Garfield Heights, O.; Stevens Construction Co. awarded general contract.
675 tons, Wolf river bridge at Shawano, Wis.; bids close Feb. 29.
600 tons, garage at 112 West Lake street, Chicago; steel bids soon.
600 tons, temple for the University of Pennsylvania, Philadelphia.
600 tons, building for Zurn Mfg. Co., Erie, Pa.; bids extended until Feb. 15. William Watson & Associates, Cleveland, engineers.
500 tons, hotel and theater building, Kenosha, Wis.
500 tons, Pennsylvania railroad bridge.
500 tons, Ambassador apartment house, Pittsburgh; McClintic-Marshall Co. low bidder.
500 tons, Vermont highway bridges.
450 tons, Lamson Bros. Co. store building, Toledo, O.; redesigned from 2000 tons. H. J. Spieker Co. general contractor.
450 tons, Market street viaduct, Shreveport, La.
400 tons, building for Ohio Box Board Co., Ritman, O.
300 tons, telephone building, Forty-fifth street and Telegraph avenue, Oakland, Calif.; bids in.
250 tons, 3-story building for E. C. Ball, Penn avenue and St. Clair street, Pittsburgh.
200 tons, Library, Ridgewood, Long Island, N. Y.
150 tons, gymnasium, 130th street and Amsterdam avenue, New York; bids asked.
130 tons, transport house for Kelly Island Lime & Transport Co., at Marble Head, O.; bids in.
125 tons, Hall for Native Daughters of Golden West, San Francisco; bids in.

Concrete Bars

4500-ton Cleveland Award Features Week of Heavy Lettings—Prices Weak

AN AWARD of 4500 tons for Cleveland Union Terminal work features a week of better activity than expected. A 2000-ton contract was let for a New Jersey power house. Considerable work is in prospect, and the present lull is regarded as temporary. Billet bar prices in Chicago are weak, as are quotations in the East excepting New York.

REINFORCING BAR PRICES, PAGE 460

Chicago, Feb. 14.—Large awards of billet reinforcing bars have taken a sharp drop in this district in the past ten days. The bulk of the heavier building work calls for rail steel bars. Because of the keen competition in new steel bars some cutting of prices is reported in bids for attractive business. Rail steel shipments are heavier than a year ago. Rail steel reinforcing bars are 1.85c to 1.95c.

Boston, Feb. 14.—The past week was one of the quietest for some time among local concrete bar interests who reported no job of any size developing. The firm price of 2.70c, base warehouse, holds steady, while 1.90c mill, and 2.265c, differentials, hold.

New York, Feb. 14.—Sellers of concrete reinforcing bars now generally are asking 1.95c, base, Pittsburgh, for mill shipment to New York territory. The market at other points in the East is somewhat weaker. At Philadelphia and Boston prevailing quotations are 1.85c to 1.95c.

Pittsburgh, Feb. 14.—With inquiries plentiful, the market on concrete bars is described as quiet because buyers are slow about closing. Bids have been opened on some road work but road steel prices have stiffened considerably, hence lettings are delayed.

Buffalo, Feb. 14.—A sharp upward turn in reinforcing bar prices is noted with 2.05c, Lackawanna, now the minimum base on lots suitable for shipment direct from steelworks. On lots from warehouse stocks the minimum is about 2.40c.

Cleveland, Feb. 14.—Awarding of 4500 tons for Cleveland Union Terminal Co. work to Bourne-Fuller Co. features the Cleveland district reinforcing bar market. New billet bar prices for the general run of new business are firm at 1.85c, Cleveland, or Pittsburgh mill. Rail steel bars have steadied to 1.75c, mill, for the small amount moving.

Awards Compared

	Tons
Awards this week	10,445
Awards last week	1,160
Awards two weeks ago	6,420
Awards this week in 1927	5,997
Average weekly awards, Jan.	8,613
Average weekly awards, 1928	7,311
Total awards to date, 1927	29,130
Total awards to date, 1928	43,865

CONTRACTS PLACED

4500 tons, work for Cleveland Union Terminal Co., Cleveland, including foundation for additional tower building, foundations for cross viaducts B, C and D, Cuyahoga valley viaduct piers, foundations for Prospect avenue viaduct, western section, etc., to Bourne-Fuller Co.
2000 tons power house at Penns Grove, N. J., to Concrete Steel Co., through Stevens & Wood, New York.
900 tons, building for Camden Rail & Harbor Terminal Corp., Camden, N. J., to Kalman Steel Co.
750 tons, Whitehouse railroad grade elimination work, Garfield Heights, O., to Bourne-Fuller Co.
705 tons, bars and joists, hospital project, Marcy, N. Y., to unnamed fabricator.
400 tons, rail steel, Blotwood school, Evanston, Ill., to Calumet Steel Co.
300 tons, Northern Life Insurance building, Seattle, 150 tons each to Northwest Steel Rolling Mills Inc. and Pacific Coast Steel Co.
210 tons, school at Seventeenth and Porter streets, Philadelphia, to American Steel Engineering Co.
200 tons, Marine hospital, Cleveland, through John Grant & Son, that city, general contractors, to Truscon Steel Co.
200 tons, Mayview hospital buildings, Pittsburgh, to Carlem Engineering Co.
180 tons, Presbyterian church, Greensboro, N. C., to unnamed seller.
100 tons, including power house for furniture factory, Huntington, Pa., to Truscon Steel Co.

CONTRACTS PENDING

5250 tons, drainage district No. 23, Los Angeles; bids to be taken about March 15.
1200 tons, drainage district No. 22, Los Angeles; bids in.
600 tons, Big Dalton dam for Los Angeles; bids in Feb. 20.
580 tons, Market street viaduct, Shreveport, La.
450 tons, building for Packard Cleveland Motor Co., Cleveland; Sam W. Emerson Co. awarded general contract.
150 tons, Lindell Trust Co. building, St. Louis.
130 tons, south approach Free bridge, St. Louis.
100 tons, buildings, insane asylum at Lakin, W. Va.; bids close Feb. 20.
100 tons, theater and store building for Louis Hendel, Pittsburgh; Charles Rieger, architect; bids close Feb. 21.
100 tons, garage, Thirteenth and St. Charles streets, St. Louis.
100 tons, new Missouri Pacific bridge at Little Rock, Ark.; E. A. Hadley, St. Louis, engineer.

Passenger cars exported from the United States in October totaled 20 of which 12 were electric railway cars.

Rails, Cars

Miscellaneous Activity Rules as Rail and Track Fastening Orders Drop—Car Market Better

ORDERS for steel rails and track fastenings being received by mills are diminishing in size. Sales of fastenings during the week at Chicago totaled 6000 to 7000 tons. Rail mills there are operating at capacity. January car awards dropped to 3900. Equipment was featured in the week by Baltimore & Ohio closing on 2000 bodies and Norfolk & Western rebuilding 1000 hoppers.

RAILROAD TRACK MATERIAL PRICES, PAGE 460

New York, Feb. 14.—Featuring the eastern car market is the award of a contract for rebuilding 1000 hopper cars for the Norfolk & Western. Other contracts have been relatively small. Fresh inquiry also is light.

Domestic freight car awards for January fell off substantially from the preceding month, amounting to but 3900 cars. Due largely to the 4000-car award by the St. Louis-San Francisco, freight car bookings for February already have exceeded the January total. Following is a comparative statement:

	1928	1927	1926	1925
Jan.	3,900	14,710	8,830	1,695
Feb.	.....	5,960	12,895	5,510
March	.....	4,955	8,895	4,730
April	.....	3,675	4,615	5,060
May	.....	5,425	4,448	6,985
June	.....	7,440	4,285	1,835
July	.....	2,295	1,265	800
Aug.	.....	1,181	152	2,875
Sept.	.....	682	3,335	7,905
Oct.	.....	886	2,840	11,145
Nov.	.....	1,189	3,925	11,685
Dec.	.....	14,897	8,990	16,885
Total	.....	64,042	60,575	77,110

A recent inquiry for a large tonnage of rails for China apparently has not brought forth any bids from American mills. It is understood that unsettled financial conditions in China are responsible for this lack of interest.

Pittsburgh, Feb. 14.—Buying of light rails continues on the same basis as for many weeks past. Operating coal mines buy an occasional carload at $36. Light rails made from old rails are selling at $34.

A fair amount of track accessory business is done each week, but the bulk of present activity consists of specifications against old contracts, and shipments are growing. The open market price on standard spikes is 2.80c, the same figure applying on small spikes. Orders for the latter product are fair. Baltimore & Ohio railroad ordered 2000 car bodies from the Standard Steel Car Co.

Chicago, Feb. 14.—Steel rail mills in the Chicago district are operating practically at capacity. Orders during the week were only in miscellaneous lots of a small volume in the aggregate, but it is understood that approximately 50,000 to 60,000 tons of rails still are to be bought in the West. Rock Island has not yet entered the market, but it is expected this road will order 35,000 to 40,000 tons. Buying of light rails, while considerably ahead of a year ago, is in small individual lots.

Track fastenings inquiry continues heavy. Sales during the week amounted to 6000 to 7000 tons. Departments engaged in track fastenings output in this district are estimated to be operating at fully 75 per cent.

Specifications from the car building shops are unusually heavy, with requisitions in on a number of recent car orders. Fruit Growers' Express has purchased 240 refrigerator car underframes from Pressed Steel Car Co. and Chicago Great Western has ordered 50 stock car and five caboose car underframes from Bradford Corp.

CAR ORDERS PLACED

Amtorg Trading Corp., 165 Broadway, New York, 200 dump cars for export, presumably for Russia, to American Car & Foundry Co.

Anglo-Chile Nitrate Co., 50 flat cars, to American Car & Foundry Co.

Baltimore & Ohio, 2000 car bodies, to Standard Steel Car Co.

Butler Bros., eight dump cars, to Koppel Industrial Car & Equipment Co.

Canadian Pacific, five Glen class compartment cars, 300 automobile and 50 Hart-Otis type cars, to Canadian Car & Foundry Co.; five Lake class compartment car frames, five cafe parlor car frames, 200 refrigerator cars and 15 horse cars, to National Steel Car Co.; four double track snow plows, seven single track snow plows, 40 vans, to be built in road's Angus shops, Montreal.

Chicago & Alton, seven baggage and mail cars and two postal cars, to Pullman Car & Mfg. Corp.

Chicago Great Western, 50 stock car and five caboose car underframes, to Bradford Corp.

Fruit Growers' Express, 240 refrigerator car underframes, to Pressed Steel Car Co.

Long Island, two combination baggage and mail cars, to American Car & Foundry Co.

Manitoba Power Co., Winnipeg, Man., one gasoline-electric rail motor car, to Mack Trucks Inc.

Nashville, Chattanooga & St. Louis, 500 center constructions, to Tennessee Coal, Iron & Railroad Co.

Norfolk & Western, rebuilding 1000 hopper cars, to Ralston Steel Car Co.

Reading Co., one combination passenger, baggage and mail gasoline-electric rail motor car, to J. G. Brill Co.

LOCOMOTIVE ORDERS PLACED

Alberta Government railways, four decapod locomotives to Canadian Locomotive Co., Ltd.

Aluminum Co. of Canada, four saddle tank locomotives, to unstated builder.

Sinclair Refining Co., one switch engine, to Baldwin Locomotive Works.

Tennessee Copper Co., one switch engine, to American Locomotive Co.

CAR ORDERS PENDING

Chicago, Indianapolis & Louisville, one gasoline-electric rail motor car.

Chicago, Rock Island & Pacific, noted in last week's issue as inquiring for an unstated number of miscellaneous coaches, is inquiring for 10 passenger cars, 10 baggage cars, 10 suburban cars, and 6 baggage and mail cars.

State Railways of Uruguay, 32 stock cars, 10 box cars and eight miscellaneous coaches; bids asked.

LOCOMOTIVE ORDERS PENDING

Boston & Albany, ten locomotives; bids asked.

Seaboard Air Line, 25 Mikado-type locomotives.

Unfilled Tonnage Is Best in 22 Months

Gaining for the fourth consecutive month, United States Steel Corp. unfilled bookings as of Jan. 31 amounted to 4,275,947 tons, an increase of 303,073 tons over Dec. 31. The total was the largest since March, 1926, when 4,379,933 tons were reported. Following is a comparative statement:

Date	Total	Change, tonnage	Change, per cent	
Jan. 31, 1928	4,275,947	303,073	+ 7.62	+
Dec. 31, 1927	3,972,874	518,430	+ 15.	+
Nov. 30, 1927	3,454,444	113,404	+ 3.39	+
Oct. 31, 1927	3,341,040	192,921	+ 6.1	+
Sept. 30, 1927	3,148,113	47,924	— 1.49	—
Aug. 31, 1927	3,196,037	54,023	+ 1.7	+
July 31, 1927	3,142,014	88,768	+ 2.8	+
June 30, 1927	3,053,246	2,305	+ 0.075	+
May 31, 1927	3,050,941	405,191	— 11.7	—
Apr. 30, 1927	3,456,132	97,008	— 2.72	—
Mar. 31, 1927	3,553,140	43,979	— 1.22	—
Feb. 28, 1927	3,597,119	203,058	— 5.34	—
Jan. 31, 1927	3,800,177	160,792	— 4.5	—
Dec. 31, 1926	3,960,969	153,522	+ 4.1	+
Nov. 30, 1926	3,807,447	123,786	+ 3.36	+
Oct. 31, 1926	3,683,661	90.152	+ 2.50	+
Sept. 30, 1926	3,593,509	51,174	+ 1.42	+
Aug. 31, 1926	3,542,335	60,187	— 1.67	—
July 31, 1926	3,602,652	124,010	+ 3.56	+
June 30, 1926	3,478,642	170,608	— 4.41	—
May 31, 1926	3,649,250	218,726	— 5.91	—
Apr. 30, 1926	3,867,976	511,959	—13.9	—
Mar. 31, 1926	4,379,935	236,887	— 5.13	—
Feb. 28, 1926	4,616,822	265,917	— 5.7	—
Jan. 31, 1926	4,882,739	150,625	— 3.0	—
Dec. 31, 1925	5,033,364	451,584	+ 9.8	+

Hanging Rock Stack Is Being Scrapped

Cincinnati, Feb. 14.—Hanging Rock furnace, near Ironton, O., which was abandoned in 1923, is being dismantled and scrapped. This was one of the historic stacks in the southern Ohio district for many years.

Hydraulic Ordered Sold

Hydraulic Steel Co., Cleveland, which has been operated by a receiver since Oct. 26, 1923, has been ordered sold at public sale March 14, by the federal court. The receiver and reorganization committee join in asking this disposition. The assets will be sold free from debt.

Steel interests in Youngstown, O., are expected to be interested in this sale. It is believed the plant will be continued in operation without interruption.

Wire

Activity in Buying and Specifications Brings Production to Better Level—Prices Untested

MOST business now on books of wiremakers was taken at former prices and higher quotations put into effect in January have not been given a real test. Agricultural districts are beginning to buy as spring approaches. Production in most mills is on the increase. Shipments are at the best level in months. Jobbers are specifying actively.

WIRE PRICES, PAGE 460

Pittsburgh, Feb. 14.—Activity in wire and wire products is confined chiefly to specifications against orders booked on the Dec. 1 schedule of prices. So far, the Jan. 26 schedule of 2.50c on plain wire and $2.65 on wire nails has not applied on many actual sales, but these are the quotable prices. Large jobbers are specifying freely, and smaller ones promise more business as soon as spring demand brings faster turnover. In the South and Southwest, fencing demand has been excellent for the past two months. During the past few weeks this demand has spread to other sections and buyers in the West and Northwest are preparing for the spring demand for fencing, barbed wire, etc. Wire mill operations are at 60 to 70 per cent.

Worcester, Mass., Feb. 14.—Demand for wire continues steady. First quarter business is holding most attention and advanced commitments are for limited lots.

Detroit, Feb. 14.—Most consumers of wire were covered for the first quarter before the recent advance, and the new level of 2.50c, Cleveland, for plain wire and $2.65 for nails applies only to small current buying.

Chicago, Feb. 14.—Wire output in the West is being increased to about 70 to 75 per cent. Specifications continue at a steady rate. Jobbers in the agricultural districts are active. The South also is ordering in heavier volume. Shipments are reported the best in months. Less price cutting

Cleveland, Feb. 14.—Specifications against first quarter contracts for nails and wire are improving, better demand from the Detroit district being noted. Although the new price on wire of 2.50c, Cleveland, is firm on spot business, some wobbling in wire nails has been reported. Most sellers are holding to $2.65 per 100-pound keg on wire nails. Competition from jobbers covered on low priced contracts, selling nails on the old base and with the old schedule of extras is less pronounced.

Bolts, Nuts, Rivets

Buying and Specifications Heavier and Makers Busier

NUT AND BOLT PRICES, PAGE 460

Chicago, Feb. 14.—Specifications show steady growth and it is indicated that orders to mills for bolts, nuts and rivets will be heavier against existing contracts for first quarter than in the preceding quarter. The farm implement industry has been sustaining the rate of specifications, although railroad buying recently has been important. Bolts and nuts are firm at 70 off, and 55 and 60 off is reported in some localities in the West for small quantities. Large structural rivets are quoted at 2.85c, Chicago, in carload lots.

Pittsburgh, Feb. 14.—Orders for nuts, bolts and rivets, particularly the latter, are more plentiful. Several fabricating shops are busier and are ordering one or two carloads at a time. The price on large rivets is firm at 2.75c, with 70 and 10 off on small rivets except when the topnage is particularly attractive and then an extra 5 per cent is granted. Nuts and bolts are 70 off. A rivet plant which has been below 50 per cent for some time plans to increase to 60 or 70 per cent by March 1.

Cleveland, Feb. 14.—Specifications for bolts and nuts are more active than in January but slightly under the rate of a year ago when demand was unusually heavy. Automotive interests are buying in good volume and sales are being made to the jobbing trade. Rivet sales fail to improve.

Cold Finished Steel

Higher Prices Being Quoted But Sales Are Small

COLD FINISHED PRICES, PAGE 460

Pittsburgh, Feb. 14.—Small bookings of cold finished bars in the spot market are on the new universally quoted basis of 2.30c. Most specifications are against 2.20c contracts given most customers for the full quarter. February promises to outstrip January on specifications since automotive demand shows considerable improvement. Other consuming lines also are becoming more active.

Chicago, Feb. 14.—Recent spirited activity in specifiying for hot rolled strip steel continues, with mill operations 70 to 80 per cent. Demand in this district comes largely from automotive works and from parts makers. Prices for hot rolled have not stiffened markedly despite the steady demand. Narrower sizes are 2.20c to 2.40c, Chicago, while wider strips are 2.10c to 2.20c. Cold rolled strip specifications have shown steady increase since the first of the year. Producers here regard the prices firm at 3.15c for one to three tons, and 2.90c for larger quantities, Pittsburgh and Cleveland.

Cleveland, Feb. 14.—Cold finished bar prices are the firmest in years, according to sellers in this district. Spot business is firm at 2.35c, Cleveladn, on the little tonnage moving. Contract specifications are showing a gain over January of from 5 to 20 per cent. Most current specifications are coming from miscellaneous manufacturers such as agricultural equipment, shovel, sewing machine and other interests. Cold bar makers expect much better business when several of the automobile companies, now holding up schedules, release tonnage on the books. An indication that prices for second quarter may be higher is noted in the market.

Strip Steel

Hot Strip Prices Placed on Higher Schedule

STRIP PRICES, PAGE 460

Pittsburgh, Feb. 14.—Cold strip makers are asking 3.15c for 1 to 3 tons at a time, or 2.90c for larger quantities. Late last week hot strip steel makers advanced prices $2 or more per ton, and while effective immediately the new schedule applies for second quarter contracts, some of which already have been booked. The new schedule is as follows: Under 3 inches, 2.20c to 2.40c, Pittsburgh; 3 to 6 inches, 2.10c to 2.20c; 6 to 12 inches, 1.90c to 2.00c; 12 to 24 inches, inclusive, 16-gage and heavier, coils or cut lentghs, 1.85c minimum plate base or 2.10c minimum blue annealed sheet base, subject to plate and blue annealed sheet extra cards.

Specifications against first quarter contracts at lower figures are improving each day, especially from an automotive standpoint.

Cleveland, Feb. 14.—New price schedules on hot rolled strip steel, effective immediately for the remainder of the first quarter, and for second quarter contracts, generally are untested. Several makers report orders of 25 to 50 tons at the new levels, but the bulk of current business is against lower priced contracts. Hot strip specifications are being maintained better than those for cold strip. Current hot rolled strip prices now are: For less than 3-inch, 2.20c to 2.40c, Pittsburgh; 3 to 6-inch, 2.10c to 2.20c; 6 to 12-inch, 1.90c to 2.00c. For 12-inch and wider 12 gage and heavier, some makers are quoting the 1.85c, Pittsburgh, plate basis, with the 2.10c blue annealed base on 12-inch and wider and lighter than 12 gage. Cold finished strip is steady at 2.90c, Cleveland, for 3 tons and over and 3.15c for 1 to 3 tons.

Nonferrous Metals

New Buying Is Light but Metals Are Moving on Old Orders at Fair Rate—Prices Are Holding Well in Face of Light Demand

Prices of the Week, Cents a Pound

	Copper Electro delivered	Copper Lake delivered	Copper Casting refinery	Straits Tin New York Spot	Straits Tin April	Lead New York	Lead East St. Louis	Zinc St. Louis	98-99% Aluminum	Spot Antimony	Ingot Nickel
Feb. 8	14.07½	14.25	13.80	53.00	53.00	6.47½	6.22½	5.62½	23.90	10.87½	35.00
Feb. 9	14.07½	14.25	13.75	53.25	53.12½	6.47½	6.22½	5.62½	23.90	10.75	35.00
Feb. 10	14.10	14.25	13.75	52.25	52.25	6.35	6.15	5.62½	23.90	10.80	35.00
Feb. 13 Holiday											
Feb. 14	14.12½	14.25	13.75	52.00	52.00	6.35	6.12½	5.60	23.90	11.00	35.00

NEW YORK, Feb. 14.—Shipments of nonferrous metals are fair but new buying is light. Development of new business so far this year has been somewhat disappointing. As a result some easiness in prices has developed. All factors considered, however, prices have held remarkably well and seldom have fluctuated in such a narrow range as in recent weeks.

Brass and copper products prices are unchanged. A little more consumer interest is reported but no change has taken place in the volume of new business done. The stronger situation in iron and steel is a source of hope to the other metal markets.

Copper—Most producers have quoted 14.12½c, Connecticut, but a little metal has been available about five points lower. The concession, however, has not brought out much business, as users apparently are well covered for the time being. Export buying has been light this past week. January statistics show total stocks declined.

Tin—The price has continued to fall. Last mid-week when the price fell to 52.75c or about 1 cent less than at the opening of the week, users rushed to cover in one of the biggest buying days ever recorded, on positions from prompt to June. The price recovered ½-cent in a few hours but the following day, with not much business, the price began to sink again and by noon Saturday the market was a little below 52.00c. This was the lowest in nearly three years. Current tin prices are high compared with several years after the war. The exact relation of supply to demand is obscure but there is no doubt that the stringency of the past few years has been removed. On the other hand there are no evidences that output has outrun consumption to any great extent.

Zinc—New business in prime western zinc continues light. Recent business was done mostly at about 5.62½c, East St. Louis. The January statistics showed stocks increased 1412 tons. Output and shipments showed little change from December.

Lead—The price has been cut 15 points on New York basis to 6.35c, while the East St. Louis price has gone down a little more gradually. As it has been on the down trend a little longer, however, the differential is slightly wider than it was a while back. The latter price is 6.10c to 6.15c. A fair amount of business has been done for prompt shipment. The price situation here has been easy on account of weakness abroad.

Aluminum—Business is being done for prompt shipment but there is no incentive to buy ahead. Prices are steady. The improved automobile situation has helped demand and shipments.—*Daily Metal Trade.*

Mill Products

Base prices cents per pound f.o.b. mill

SHEETS	
Yellow brass (high)	18.75
Copper, hot rolled	22.75
Lead, full sheets (cut ¼c more)	10.00
Zinc (100-pound base)	10.00
Aluminum, flat sheets, up to 10 gage, 3" to 72" wide	31.50
SEAMLESS TUBES	
Yellow brass (high)	23.62½
Copper	24.50
RODS	
Yellow brass (high, free turning)	16.50
Naval brass	19.25
WIRE	
Copper, small lots	15.62½
Yellow brass (high)	19.25

Old Metals

Dealers' buying prices, cents per pound

HEAVY RED BRASS	
New York	9.25 to 9.50
Chicago	9.25 to 9.50
Cleveland	9.50 to 10.00
HEAVY YELLOW BRASS	
Chicago	6.75 to 7.00
Cleveland	7.25 to 7.50
ZINC	
New York	3.50 to 3.75
Cleveland	3.25
HEAVY COPPER AND WIRE	
New York	11.50 to 11.75
Boston	10.75 to 11.25
Chicago	10.50 to 11.00
Cleveland	11.50 to 11.75
RED BRASS BORINGS	
New York	8.25 to 8.50
YELLOW BRASS TUBING	
Cleveland	7.50
LIGHT COPPER	
New York	10.00 to 10.25
Chicago	9.50 to 9.75
Cleveland	10.00 to 10.25
LIGHT BRASS	
Boston	6.00 to 6.50
Chicago	6.25 to 6.50
Cleveland	5.50 to 5.75
ALUMINUM	
Clippings, Cleveland	17.50
Borings, Cleveland	9.50
Cast, Cleveland	13.00
Cast, Boston	12.00 to 12.50

Secondary Metals

Remelt Aluminum No. 12	17.00 to 17.50
Brass ingot, 85-5-5-5	12.25 to 12.50

Coke By-Products

Sulphate Lower for Export—Solvent Naphtha Still Weak

New York, Feb. 14.—Export prices on sulphate of ammonia have dropped to $2.20, port, for material in double bags, and fair business has been placed at this figure for the Orient and Porto Rico. This is 10 to 15 points under the nominal range that has been prevailing recently and reflects sharp competition from European sellers, particularly German producers. Good demand also is coming out from British West Indies. Domestic demand is fairly brisk with producers closing at $2.30 to $2.35, delivered.

Increasing output of coal tar products is being offset in a large measure by improved demand with a result that prices on most products are steady. Weakness still prevails in solvent naphtha, but with this exception there appears to be little shading in any line. Toluol is perhaps the most active of all products, due to increasing demand from paint and lacquer manufacturers.

Demand for naphthalene continues to improve as the spring cleaning season approaches. Shipments for spring delivery are being booked at 5 to 5½ cents, works, for flakes and 6 to 6½ cents, works, for balls.

Coke Oven By-Products

Per Gallon at Producers' Plants in Tank Lots

	Spot	Contracts
Pure benzol	$0.23	.....
90 per cent benzol	0.23	.....
Toluol	0.35	.....
Solvent naphtha	0.30 to 0.35	.....
Commercial xylol	0.36	.....
Phenol	0.19 to 0.20	.....

Per Pound at Producers' Plants

Naphthalene flakes	0.05 to 0.05½
Naphthalene balls	0.06 to 0.06½

Per 100 Pounds Delivered

Sulphate of ammonia	$2.30 to $2.35

Quicksilver Is Easy

New York, Feb. 14.—Quicksilver is easy, at $122 to $123 a flask.

Warehouse

Better Buying Reported for February—Price Advances Fairly General on Wide Range of Products in Different Districts

PRICE advances have reached the warehouse market and revisions of lists upward were common during the past week, especially on cold finished steel. February buying has picked up from the January level in some districts, although improvement is not marked.

Prices on cold rolled strip steel have been advanced $3 a ton in the New York metropolitan warehouse market. New prices are 5.15c for standard sizes and 5.40c for round edge sizes. This advance is a reflection of recent increases at the mills. Hartford, Conn., jobbers have also made an advance, now quoting 5.25c for standard and 5.50c for round edge sizes. New York jobbers also have advanced prices recently $2 a ton on cold drawn stock.

Rather a quiet week passed so far as movements from Boston warehouses were concerned. Prices, as a whole, are firm.

Bars and sheets lead warehouse demands at Detroit. Railroad buying, especially of bars, has broadened. Structural demand continues slow but is certain to expand. Warehouses generally are hopeful that the normal spring improvement will eventuate.

Cincinnati warehouse deliveries in this month are rapidly approaching satisfactory volume and in most cases prices are firm. The situation south of Cincinnati has not yet cleared and prices there are weak even down into Tennessee. Only one price change is reported and that was established Feb. 10 in advancing reinforcing bars from 3.00c to 3.15c.

Warehouse demand at Buffalo is gaining slowly, with sales about up to the usual average for this season. Prices are steady and unchanged.

Philadelphia jobbers have advanced cold finished steel prices and now are quoting rounds at 3.35c and flats at 3.85c. Warehouse demand has improved somewhat over the rate of the preceding week.

In the San Francisco district warehouse prices have been advanced on several items and reflect the recent mill increases. Nails have been advanced from 3.25c to 3.40c and black, blue annealed and galvanized sheets have gone from 4.80c to 4.95c, from 3.75c to 3.90c and from 5.35c to 5.50c, respectively.

Shipments from Boston warehouses continued steady during the past week, maintaining the betterment over this time a year ago. Prices are firm with a slight improvement in cold finished steel, in which rounds and hexagons were up 10 cents per 100 pounds with flats and squares showing a similar appreciation from 3.85c to 3.95c.

Business of the St. Louis warehouses continues the betterment which began with the new year. Weather

(*Concluded on Page* 474)

Warehouse Quotations in Cents Per Pound at Leading Market Centers

STEEL BARS

Baltimore	2.60c to 3.31c
Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Cleveland	3.00c
Detroit	3.00c
Ft. Worth	3.75c
Houston	3.00c
Los Angeles	3.40c
New York	3.24c
Philadelphia	2.40c to 2.90c
Pittsburgh	2.90c
Portland	3.00c
San Francisco	3.15c
Seattle	3.00c
St. Louis	3.15c
St. Paul	3.25c
Tulsa	3.75c to 4.06c

IRON BARS

Baltimore	2.60c to 3.31c
Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Detroit	3.00c
Ft. Worth	3.75c
New York	2.80c to 3.24c
Philadelphia	2.40c to 2.90c
St. Louis	3.15c
Tulsa	3.75c to 4.06c

REINFORCING BARS

Baltimore	2.60c to 3.31c
Boston	3.265c to 3.50c
Buffalo	2.75c
Cincinnati	3.15c
Cleveland	2.20c
Detroit	3.00c
Ft. Worth	3.50c
Houston	3.00c
*Los Angeles	3.05c
**Los Angeles	3.30c
New York	2.95c
Philadelphia	2.30c to 2.80c
Pittsburgh	2.90c to 3.175c
*San Francisco	2.85c
**San Francisco	3.10c
Seattle	3.00c
St. Louis	3.15c
Tulsa	3.75c to 4.00c
Youngstown	2.30c to 2.60c

*Carload. **Less carload.

STRUCTURAL SHAPES

Baltimore	2.60c to 3.41c
Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland	3.00c
Detroit	3.10c
Ft. Worth	4.25c
Houston	3.25c
Los Angeles	3.40c
New York	3.34c
Philadelphia	2.40c to 2.80c
Pittsburgh	3.00c
Portland	3.00c
San Francisco	3.15c
Seattle	3.00c
St. Louis	3.25c
St. Paul	3.35c
Tulsa	3.75c to 4.16c

PLATES

Baltimore	2.60c to 3.41c
Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland, ¼-in. and thicker	3.00c
Cleve., 3/16-in.	3.20c
Detroit	3.10c
Detroit, 3/16-in.	3.30c
Ft. Worth	4.00c
Houston	3.00c
Los Angeles	3.40c
New York (sheared and universal)	3.34c
New York (floor)	5.25c
Philadelphia	2.40c to 2.80c
Phila., 3/16-in.	2.60c to 3.00c
Pittsburgh	3.00c
Portland	3.00c
San Francisco	3.15c
Seattle	3.00c
St. Louis	3.25c
St. Paul	3.35c
Tulsa	3.75c to 4.16c

No. 10 BLUE ANNEALED SHEETS

Baltimore	3.10c to 3.66c
Boston, 3/16-in.	3.915c
Buffalo	3.70c
Chicago	3.50c
Cincinnati	3.60c
Cleveland	3.25c
Detroit	3.50c
Ft. Worth	4.70c
Houston	3.90c
Los Angeles	3.85c
New York	3.79c to 3.89c
Portland	4.00c
Philadelphia	3.15c
Pittsburgh	3.10c
San Francisco	3.75c
Seattle	4.00c
St. Louis	3.60c
St. Paul	3.75c
Tulsa	4.20c to 4.56c

No. 24 BLACK SHEETS

Baltimore	3.60c to 4.30c
Boston	5.00c
Buffalo	4.20c
Chicago	3.95c
Cincinnati	4.05c
Cleveland	3.75c
Detroit	4.10c
Ft. Worth	4.70c
Los Angeles	5.10c
New York	4.10c
Philadelphia	4.15c
Pittsburgh	3.75c
Portland	4.90c
San Francisco	4.95c
Seattle	5.00c
St. Louis	4.45c
St. Paul	3.95c
Tulsa	4.75c

No 24 GALVANIZED SHEETS

Baltimore	4.30c to 5.45c
Boston	5.85c
Buffalo	5.05c
Chicago	4.80c
Cincinnati	4.90c
Cleveland	4.60c
Detroit	4.90c
Ft. Worth	5.75c
Houston	5.30c
Los Angeles	5.30c
New York	4.70c
Philadelphia	5.00c
Pittsburgh	4.60c
Portland	5.65c
San Francisco	5.50c
Seattle	5.75c
St. Louis	5.25c
St. Paul	4.90c
Tulsa	5.55c

BANDS

Baltimore	3.25c to 4.06c
Boston	4.015c
Buffalo	4.05c
Chicago	3.65c
Cincinnati	3.95c
Cleveland	3.65c
Detroit	3.65c
Ft. Worth	4.40c
Houston	3.65c
Los Angeles	4.25c
New York	3.99c
Philadelphia	3.25c
Pittsburgh	3.60c
Portland	4.00c
San Francisco	4.00c
Seattle	4.00c
St. Paul	3.90c
Tulsa	4.71c

HOOPS

Baltimore	4.16c
Boston	5.50c
Buffalo	4.05c
Chicago	4.15c
Cincinnati	4.40c
Cleveland	3.65c
Detroit	4.15c
New York	4.49c
Philadelphia	3.50c
Pittsburgh	4.50c
Seattle	5.00c
St. Paul	4.40c

COLD FINISHED STEEL

	Rounds, hexagons	Flats squares
Baltimore	3.25c	3.75c
Boston	3.45c	3.95c
Buffalo	3.95c	4.45c
Chicago	3.60c	4.10c
Cincinnati	3.85c	4.35c
Cleveland	3.65c	4.15c
Detroit	3.85c	4.35c
Los Angeles	5.25c*	.....
New York	3.40c	3.90c
Philadelphia	3.35c	3.85c
Pittsburgh	3.60c	4.10c
Portland	5.00c*	.....
San Francisco	4.25c*	.....
Seattle	5.00c*	.....
St. Paul	3.85c	.....
Tulsa	4.66c	5.16c

*Rounds only.

COLD ROLLED STRIP

Boston, 0.100-inch, 500-lb. lots	6.00c
Buffalo	5.85c
Chicago*	6.10c
Cincinnati	7.15c
Cleveland*	5.95c
Detroit	5.80c
New York	5.15c
Philadelphia	5.00c†

*Net base, straightening, cutting, boxing one ton or more.

†Plus mill, size and quantity extras.

SWEDISH IRON AND STEEL

New York duty paid

Hollow drill steel	14.00c
Iron bars, rounds	6.25c

Flats and Squares

Baltimore, New York, Phila.	6.60c

Coast Prices Are Higher

Advances in East Strengthen Market, Though Sales Are Not Heavy

SAN FRANCISCO, Feb. 11.—(*By Air Mail*)—Demand for iron and steel products is holding up well and marked activity is noted in structural shapes and cast iron pipe. Importations of foreign iron and steel products during November were about on a par with October. The tonnages for the principal items were as follows:

	Nov.	Oct.
Coke	2,498	7,658
Pig iron	1,794	811
Shapes	4,961	2,041
Bars	2,843	1,316
Cast iron pipe	1,782	2,043
Tubular Products	1,563	1,533

Pig Iron and Coke

Movement of foundry pig iron and coke this week was confined to unimportant lots and foundry operations have shown practically no improvement. Of iron imported in November, Los Angeles and San Francisco foundries took about 600 tons each. In coke, Los Angeles interests took 1500 tons, and San Francisco 550 tons. No change is noted in prices.

Bars, Plates and Shapes

Awards of concrete bars this week were limited to small lots. To date this year 13,879 tons have been placed, compared with 8727 tons for the corresponding period in 1927. Eastern and western bar producers are disturbed by the increase of foreign material. Pending business calls for over 13,000 tons. New inquiries include 600 tons for the Dalton dam at Los Angeles and 5250 tons for a drainage district improvement project at Los Angeles.

No plate awards of importance were booked this week and awards so far this year total 2275 tons, compared with 6225 tons for the same period last year. No action has yet been taken on the inquiry of the Standard Oil Co. for a deisel oil tanker, involving 3500 tons of plates and 1500 tons of shapes. Bids are being taken for a riveted pipe line at Tacoma, involving 1200 tons. The Western Pacific railroad has taken bids on 170 tons of 5/16-inch universal plates for 800 box cars. The Southern Pacific Co. will open bids Feb. 24 for three months' requirements of plates, which may involve 400 tons. Prices have advanced $1 a ton, from 2.25c to 2.30c c.i.f., reflecting the higher quotations in eastern markets.

Structural shape awards this week aggregated 3463 tons, bringing the total for the year to 15,077 tons, compared with 33,305 tons for the corresponding period in 1927. New inquiries include 300 tons for a telephone building at Oakland. Pending business is now over 28,000 tons. Plain material continues firm at 2.35c c.i.f.

Other Finished Material

Movement of cast iron pipe was more active this week and awards totaled 1154 tons. So far this year 9522 tons have been booked, compared with 12,313 tons for the same period last year. The largest award involved 369 tons for a street improvement project at San Diego. New inquiries include 3100 tons for Southgate, Calif. Pending tonnages are in excess of 6500 tons. Bids were opened this week by Los Angeles on two steel pipe specifications involving 130,000 feet of 6-inch pipe. Grinnel Co. was low bidder.

Demand for cold rolled material is by no means heavy but mill representatives are encouraged over price advances and believe this fact will stimulate business to some extent. Present quotations are firm at 2.30c base Pittsburgh.

Movement of sheets has not been heavy and current sales and inquiries are confined to unimportant tonnages. Prices have advanced from $3 to $4 a ton and blue annealed sheets, No. 10 gage, are now 2.75c c.i.f. although one or two producers have not yet notified their trade regarding higher prices. Black and galvanized sheets, No. 24 gage, are 3.60c and 4.40c c.i.f. respectively. Wire prices have also advanced from $3 to $4 a ton and nails now appear firm at 3.10c, c.i.f. Coast ports.

Coast Pig Iron Prices

Utah basic	$25.00 to 26.00
Utah foundry	25.00 to 26.00
*German	24 25
*Indian	24.00 to 25 00
*Dutch	24.50

*C.i.f. duty paid.

Northwest Trade Slow

SEATTLE, Feb. 8.—The Pacific Northwest iron and steel trade reports business rather slow at the moment. There are many proposed projects which will require large tonnages of steel but they are not yet definitely up for figures. Considerable tonnage also is involved in jobs pending and on which action is expected daily. The outlook is regarded as very promising for an active year although spring buying has not yet developed.

The week's awards include 300 tons of reinforcing materials and 300 tons of plates. About 2050 tons of plates will be required for Seattle's Cedar River penstock, bids Feb. 17. An unnamed project in Oregon is reported to involve about 1000 tons of plates.

Mill representatives are quoting 2.35c for merchant bars and structurals and 2.30c for plates. The market appears steady at these levels with a possibly firmer tone due to upward tendency of prices in the East. Reinforcing materials also seem to be stronger.

Awards of reinforcing this week totaled 300 tons for the 27-story Northern Life building, Seattle, divided equally between the Pacific Coast Steel Co. and the Northwest Steel Rolling Mills. Considerable tonnage is either pending or will be up for figures soon, including the Diablo dam, Portland Veterans' hospital, Fort Lewis hospital, several state highway jobs, Paramount theater, Medical and Dental building, and a paper plant project at Spokane. The total exceeds 4000 tons, not including a $100,000 viaduct at Mt. Vernon, Wash., bids next month.

More interest in plates is indicated. Seattle will receive bids Feb. 17 for a penstock at Cedar Falls hydroelectric development, involving 2050 tons. Alternate proposals for combined steel and wood pipe will be received. An additional contract for the Port Townsend project went to the Steel Tank & Pipe Co., Portland, involving 300 tons of plates.

Warehouse Prices Gain

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has not been auspicious for best results, but despite this handicap sales are satisfactory. In the South there is a heavier call for road building materials and the outlook for this section of the trade for balance of the year is exceptionally bright.

Business in Cleveland generally is spotty although the trend is upward, February warehouse sales being better than those in January, both in number and tonnage. Building material dealers report lessened activity. Prices are unchanged except for an increase of $2 a ton on concrete bars, Youngstown base.

No Longer Sells Tubing

Cleveland, Feb. 14.—The Cleveland branch of Joseph T. Ryerson & Son Inc., Chicago, withdraws from the mechanical tubing field by the sale of a large stock of miscellaneous sizes to Edgar T. Ward & Sons Co., Pittsburgh. This stock was acquired by the Ryerson interest a year ago when it bought the Borne-Fuller warehouse and stock at Cleveland. The Ryerson warehouse will, however, continue to handle boiler tubes.

Merge Institutes

Flat Steel Body to Promote Interests of Sheet and Strip Trades

Merging of three important trade associations into one, to be known as the Hot Rolled Flat Steel Products institute, is being worked out by committees of the National Association of Sheet and Tin Plate Manufacturers, Cold-Rolled Strip Steel institute and Hot-Rolled Strip Steel institute.

Plans thus far completed provide that George H. Charls will have direction of the proposed Flat Steel institute, assisted by Theodore E. Sproull in charge of cold-rolled strip and A. N. Flora in charge of the sheet and hot-rolled strip divisions.

Mr. Flora has just resigned as vice president in charge of sales for the Trumbull Steel Co. Mr. Charls has been commissioner of the Hot Strip institute and Mr. Sproull of the Cold Strip institute, with offices at Pittsburgh. Offices of the Flat Steel institute will be established at Cleveland as soon as further details can be worked out in a few weeks.

The purpose of combining these three associations is to bring into harmony the sheet and the growing strip steel industries. There is so much overlapping of territory between these industries that it followed naturally there also was overlapping of direction of all the three trades. Further, it is proposed to do much additional research work to the end that each industry will find its proper place and can develop new outlets. Statistical labors will be co-ordinated and trade problems can be better attacked. Prices will be strictly taboo, as in the past. The expense of maintaining quarters and officers for one institute will be much reduced for the individual membership rather than for three.

Mr. Charls, who will be the active head of the proposed institute, has been commissioner of the Hot Strip institute since its formation on May 17, 1927. Previously he had been president of the United Alloy Steel Corp., Canton, O. Mr. Sproull, previous to becoming commissioner for the Cold-Rolled Strip institute last May, had been sales manager for the Trumbull Steel Co. and later general sales manager for the Oliver Iron & Steel Co.

Named District Manager

Baltimore, Feb. 14.—Austin T. Hunt, whose resignation as sales manager of the Seneca Iron & Steel Co., Buffalo, was announced in IRON TRADE REVIEW, Jan. 12, has been appointed district sales manager for Eastern Rolling Mill Co., Baltimore, with his headquarters in Baltimore.

January Sheet Output Is Largest in Year

Pittsburgh, Feb. 14.—Sales of sheets dropped from 530,197 tons in December to 302,921 tons in January, according to the National Association of Sheet and Tin Plate Manufacturers. January sales were the lowest since last November. Production in January totaled 316,541 tons, against 260,130 tons in December. January output was the largest since March, 1927, with 359,340 tons. January shipments amounted to 274,126 tons, the largest since last June, with 281,395 tons. January and December figures, with relationship to capacities of the companies reporting, are as follows:

	Jan., 1928		Dec., 1927	
	Net tons	Per cent capacity	Net tons	Per cent-capacity
Sales	302,921	85.7	530,197	154.7
Production	316,541	89.6	260,130	75.9
Shipments	274,126	77.6	221,689	64.7
Unfilled tonnage Feb. 1 and Jan. 1	694,197	196.5	745,393	217.5
Stock awaiting shipments	110,945	31.4	97,630	28.5
In stock, unsold	59,508	16.8	52,474	15.3

The total number of hot mills in the United States is 720, with a total capacity for January of 486,550 tons. The percentage of the capacity to which the foregoing figures are related is 72.6. Monthly comparisons for the past year follow:

	Sales	Production	Shipments
January, 1927	261,357	256,856	239,019
February	241,951	282,171	261,412
March	345,900	359,340	338,436
April	292,965	316,100	300,858
May	212,337	309,360	302,759
June	224,321	300,706	281,395
July	230,715	237,243	252,034
August	177,647	266,645	266,713
September	258,427	220,919	230,443
October	234,358	245,765	232,626
November	344,519	232,041	224,789
December	530,197	260,130	221,689
January, 1928	302,921	316,541	274,126

Buys Second Quarter Iron

(*Concluded from Page* 461)

leable iron are $18 to $18.50, Detroit furnace.

Chicago, Feb. 14.—Numerous quiet inquiries are appearing for second quarter pig iron. Shipments are making important increases over January. Active spot buying continues for first quarter, and several additional important tonnages have been closed for next quarter. Stocks of iron in furnace yards are adequate. No change in operations is contemplated soon. Five of the ten merchant stacks in the district are active, two Federal, two Iroquois, and the Zenith furnace at Duluth. The base price of $18.50, Chicago furnace, is steady for spot and contract business. A few small sales were made recently at slightly less. Silvery business is light. Some sales of charcoal iron are reported in this district at $24, furnace.

Cincinnati, Feb. 14.—Pig iron sales are small. One local furnace representative booked 975 tons in the past week, another 750 tons, and others a few carloads. Lake furnaces are trying to establish $17, base, as their price.

St. Louis, Feb. 14.—A slightly firmer tendency is noted in pig iron, although no specific price changes have been announced. Broadening interest is reflected in the variety of melters purchasing. Inquiries total over 10,000 tons. The largest is for 4000 tons for an Illinois radiator interest. A car builder in that state wants 1000 tons, a St. Louis machinery builder 500 tons, an Iowa specialty maker 500 tons and a stovemaker 400 tons. About 4500 tons was sold in the past week.

Birmingham, Ala., Feb. 14.—Pig iron buying is limited to small lots. No selling is noted for second quarter. The price still is $16, base, Birmingham. Ten blast furnaces are on foundry, six on basic and one on special iron.

Philadelphia, Feb. 14.—It is reported here R. D. Wood & Co. has bought a tonnage of pig iron at Everett, Mass., for delivery by barge to Florence, N. J. The American Radiator Co. is inquiring for 1000 tons of No. 2 plain and 1000 tons of No. 2X for second quarter shipment to its Gloucester City, N. J., plant, which it recently purchased from Pusey & Jones Co. Other pig iron business involves small lots.

Bond Issue Is Planned

Pittsburgh, Feb. 14.—Stockholders of the Pittsburgh Steel Co. will hold a special meeting here, April 12, to consider a proposal of directors to increase the company's indebtedness by a $16,000,000 bond issue. An issue of $2,000,000 in 6 per cent notes, due serially to Sept. 1, 1930, will be retired at further expansion and acquisition of several plants is contemplated, it is said. The bond issue was put out in 1925, when the Pittsburgh Steel Co. purchased the Pittsburgh Steel Products Co. Alexander P. Moore, former ambassador to Spain and ex-Pittsburgh publisher, was recently elected a vice president of the latter concern. About $5,000,000 of the bond issue will be reserved for a by-product coke plant.

Scans Furnace Practice

Birmingham, Ala., Feb. 14.—George N. Hohl, chairman of the blast furnace committee of the Bethlehem Steel Co., has been inspecting furnace practice at the Sloss-Sheffield Steel & Iron Co., Gulf States Steel Co., Tennessee Coal, Iron & Railroad Co., Woodward Iron Co. and other producers. He inspected equipment devised by J. P. Dovel, vice president of the Sloss-Sheffield company, which minimizes flue-dust losses.

Republic Earnings Off During 1927

Declining operations after the first quarter of 1927 brought average production of the Republic Iron & Steel Co. to 63 per cent of capacity for the full year, according to the annual report to stockholders submitted by Chairman John A. Topping. The volume of business in 1927 was $44,550,040, compared with $53,890,444 in 1926, and total shipments were 916,668 tons compared with 1,015,926 tons in 1926.

Net income for the year amounted to $3,018,282 after charges, compared with $5,065,022 in the preceding year. During the fourth quarter the net income was $483,753 compared with $501,992 in the third quarter and $1,309,474 in the fourth quarter of 1926. Unfilled orders as of Dec. 31, 1927, amounted to 140,809 tons, against 88,383 tons Sept. 30, 1927, and 157,250 tons as of Dec. 31, 1926. Unfilled orders of pig iron, however, increased from 44,010 tons at the end of 1926 to 45,893 tons as of Dec. 31, 1927.

Pacific Steel Conference May Be Formed

Seattle, Feb. 8.—Representatives of all branches of the iron and steel industry in the Pacific northwest have been invited to a conference at the Winthrop Hotel, Tacoma, Wash., Feb. 27, to form an organization to promote the industry, expand its markets, reform certain abuses, promote uniformity in trade usages, combat outside competition, work for standardization of building codes, and create increased confidence and stability.

T. A. Stevenson, manager of the Tacoma chamber of commerce, will be secretary of the meeting. The Pacific Northwest Iron and Steel Conference probably will be the name adopted. Charles A. Abbott, New York, executive director, and Lee H. Miller, Cleveland, chief engineer, of the American Institute of Steel Construction will be present.

Farrell Is Quiet on Tube Mill for South

Birmingham, Ala., Feb. 14.—Although it was generally reported that the inspection trip of James A. Farrell, president, and Myron C. Taylor, new chairman of the finance committee, of the United States Steel Corp., was chiefly in connection with a new tube mill in the Birmingham district, the trip itself developed nothing along this line.

In a statement Mr. Farrell said, "So far as further building at this time is concerned, nothing definite is contemplated. It will take some months to complete units under construction. Should the need for new plants develop, careful studies will be made."

Mr. Farrell also observed that "the organization of the Tennessee company impresses us as being competent and efficient, and too much credit for the success of the company and the satisfactory character of the new plants and their management cannot be given to our esteemed president, George Gordon Crawford and his organization."

Furniture Orders Up

Washington, Feb. 14.—December shipments of steel furniture totaled $2,850,314, according to department of commerce statistics. This is a gain over November. Further monthly comparisons follow:

	Business Group		Shelving	
1926	Orders received	Shipments	Orders received	Shipments
Dec.	2,802,325	2,934,831	*561,979	621,773
Total	31,393,171	31,429,140	7,340,351	7,837,017
1927				
Jan.	2,886,815	2,730,714	876,677	555,296
Feb.	2,771,477	2,686,419	657,833	607,622
March	3,021,915	3,080,931	689,964	690,788
April	2,750,877	2,849,536	621,888	677,745
May	2,381,369	2,528,672	686,144	585,397
June	2,369,244	2,519,512	638,485	657,927
July	2,091,804	2,040,209	534,592	564,744
Aug.	2,381,889	2,474,854	592,353	604,107
Sept.	2,367,857	2,218,602	607,905	531,154
Oct.	2,410,552	2,379,557	551,259	619,293
Nov.	2,476,230	2,856,181	574,763	590,764
Dec.	2,850,314	2,740,602	619,276	577,910
Total	30,760,343	31,105,789	7,351,122	7,264,282

Ship Less Locomotives

Washington, Feb. 14.—Locomotive shipments in January totaled 47, compared with 72 in December, department of commerce figures show. Following are monthly comparisons:

Year and Month	Shipments			Unfilled orders		
	Total	Domestic Steam	Domestic Electric	Total	Domestic Steam	Domestic Electric
1927						
Jan.	57	16	8	412	334	23
Feb.	80	69	10	403	314	29
March	137	84	11	392	301	55
April	98	72	23	334	255	42
May	109	77	15	434	380	34
June	89	63	18	400	333	31
July	60	35	18	399	299	57
Aug.	81	71	6	363	244	68
Sept.	127	86	7	271	167	49
Oct.	112	81	12	182	97	45
Nov.	52	31	7	145	74	42
Dec.	72	41	13	232	178	39
Total 1927	1,074	726	148	.....	.....	.....
1928						
Jan.	47	22	23	222	161	38

Freight cars exported from the United States in October totaled 194, of which Canada took 50, Cuba 79, Philippine Islands, 51 and Mexico 14.

Screw Machine Products Association Elects

At the fifth annual meeting of the Screw Machine Products association held in Chicago Feb. 3, the following officers were elected for the coming year: President, David Bell, David Bell Co. Inc., Buffalo; vice president, S. G. Eastman, Belvidere Screw & Machine Co., Belvidere, Ill.; treasurer, F. H. Fischer, Fischer Special Mfg. Co., Cincinnati; secretary board of directors, J. S. Cochran, Mac-It Parts Co., Lancaster, Pa.; field secretary, Malcolm Baird, 232 Delaware avenue, Buffalo.

E. F. DuBrul, general manager of the National Machine Tool Builders' association, Cincinnati, was the principal speaker at the meeting, his subject being, "Dollar Delusion in Depreciation Accounts." The association took favorable action to adopt a monthly business barometer indicating on a percentage basis the relative volume placed and unfilled orders. The eastern division of the association conducted its annual meeting in Brooklyn, N. Y., Feb. 10.

Tractor Shipments Gain

Washington, Feb. 14.—Shipments of electric industrial trucks and tractors in January totaled 112, compared with 96 in December, according to the department of commerce figures. Monthly comparisons follow:

	Domestic		
	Tractors	All other Types	Exports
1927			
January	6	67	17
February	11	120	7
March	10	96	10
April	12	89	4
May	19	77	10
June	20	97	23
July	12	73	5
August	3	87	2
September	8	66	5
October	11	81	17
Nov.	15	64	19
Dec.	8	77	11
1927 Total	135	994	130
1928			
January	5	98	9

Trend Committee Meets

Washington, Feb. 14.—The first meeting of the committee on recent economic changes, appointed by Secretary Hoover, will be held in New York, Feb. 21. Under the auspices of the committee, the National Bureau of Economic Research Inc., New York, is undertaking an inquiry into changes in economic currents in the United States.

Chile is using considerably more expanded metal and metal lath since resistance to earthquake shock has been demonstrated.

Foundrymen Arrange Program

American Foundrymen's Association Preparing for Thirty-second Annual Convention in Philadelphia, May 14-18

Many Technical Papers To Be Presented—Cupola Operation Course Will Be a Feature—Special Exhibits Planned

THE interests of all four branches of the foundry industry have been cared for in arranging the program of sessions and technical papers for the thirty-second annual convention of the American Foundrymen's association which is to be held in Philadelphia May 14-18. An innovation this year, to interest the practical men in cast iron foundries operating and working with cupolas, will be the four-period cupola operation discussion course.

These discussion groups will be held on each of the first four days of the meeting. The topics which will be considered on these days are as follows: May 14, "Principles Underlying Cupola Melting Processes;" May 15, "Cupola Construction Details;" May 16, "Cupola Charging Practice;" and May 17, "Cupola Improvement."

Technical sessions scheduled for the mornings of convention week will be held in the meeting rooms of the Bellevue-Stratford hotel and the afternoon meetings will be conducted in the meeting rooms of the Commercial Museum which will house the foundry exhibits. A special room in the exhibit hall is to be set aside for technical exhibits, including the molding sand testing and control exhibit of the joint committee on foundry sand research; the Obermayer foundry device contest; the exhibit of castings and patterns entered in the apprentice molding and patternmaking contests; and the exhibit of malleable, steel and gray iron castings, showing the engineering possibilities of these castings.

The casting exhibit for the malleable industry will be under the supervision of the Malleable Iron Research institute, that for steel castings will be under the direction of the Steel Founders' Society of America, and the cast iron industry will be under the supervision of a committee representing the industry.

The apprentice contest display will consist of patterns and castings which have been judged the best in apprentice contests held under the direction of district foundry associations and individual plants. The judges of the national contest at the convention will choose the three best entries in each group, namely, cast iron molding, steel molding and patternmaking, to receive the prizes to be given by the A. F. A.

The Obermayer contest is to judge the best foundry device or fixture of general foundry application which may be submitted by any shop man. The entries may be in the form of models, the device itself, or drawings or photographs accompanying a written description stating the purpose, application and advantages of the device. The award in the form of a prize is provided for by the interest of a fund donated to the A. F. A. by the S. Obermayer Co., Chicago, and the contest is open to any shop man connected with a foundry or pattern shop.

The schedule of sessions for the week is as follows:

Monday, May 14

Registration and committee meetings.
First session cupola operation course.

Tuesday, May 15

9:30 a.m.—Open meeting and business session.
11:00 a.m.—Nonferrous metals.
Steel founding.
Cast iron.
2:30 p.m.—Foundry costs.
Second session cupola operation course.

Wednesday, May 16

10:00 a.m.—Steel metallurgy.
Cast iron.
12:30 p.m.—Round table on brass founding.
2:30 p.m.—Foundry management.
Foundry coke specifications.
Third session cupola operation course.

Thursday, May 17

10:00 a.m.—General foundry practice.
Apprentice training.
12:30 p.m.—Round table on malleable founding.
2:30 p.m.—Sand control.
Fourth session cupola operation course.

Friday, May 18

10:00 a.m.—Materials handling.
Malleable founding.

Among the technical papers which have been scheduled are the following:

"Furnace Refractories for Brass Foundries," by H. M. St. John, chief metallurgist, Detroit Lubricator Co., Detroit.
"Science in the Foundry," by E. F. Hess, metallurgist, Ohio Injector Co., Wadsworth, O.
"Risers, Their Need and Feed," by R. R. Clarke, alloy foundry, General Electric Co., Erie, Pa.
"Variables in Steel Foundry Practice," by F. A. Melmoth, Thos. Firth & Sons Ltd., Sheffield, England. Exchange paper of the Institute of British Foundrymen.
"Economies in Oxyacetylene Cutting for Riser Removing," by G. O. Carter, consulting engineer, Linde Air Products Co., New York.
"Sand Reclaiming in the Steel Foundry ," by D. M. Scott, Gould Coupler Co., Depew, N. Y.
"Interdependence of Operating and Sales Departments in the Success of a Foundry," by K. V. Wheeler, Lebanon Steel Foundry, Lebanon, Pa.
"Theory of Cupola Operation in Relation to Practice," by R. B. Schaal, Roberts and Manders Stove Co., Hatboro, Pa.
"Automatic Blast Gate Control for Cupola," by H. W. Crawford, industrial department, General Electric Co., Schenectady, N. Y.
"Necessity for Creating a Casting Consciousness," by A. F. Jensen, Hanna Engineering Co., Chicago.
"The Schedule Fallacy," by J. J. Ewens, George H. Smith Co., Milwaukee.
"General Characteristics of Alloy Steel Castings" by J. W. Frank, Chicago Steel Foundry Co., Chicago.
"Manganese Steel," by H. P. Evans, Pettibone-Mulliken Co., Chicago.
"The Research Laboratory of the American Steel Foundries," by W. C. Hamilton, research director, American Steel Foundries, Indiana Harbor, Ind.
"Temperature Measurements of Molten Cast Iron," by H. T. Wensel and W. F. Roesser, bureau of standards, Washington.
"Influences of Carbon and Silicon Variations in Cast iron," by D. G. Anderson and G. R. Bessmer, foundry engineers, Western Electric Co., Chicago.
"Producing High Strength Cast Iron," by John D. Miller, general superintendent, Cresson Morris Co., Philadelphia.
"Basic Principles of Management in the Foundry," by J. D. Towne, consulting engineer, Dayton, O.
"Stabilizing Labor and Cutting Cost by Horse Sense," by A. D. Lynch, director of personnel, Ohio Brass Co., Mansfield, O.
"What Does the Buyer Expect for His Money?" by J. A. Marks, purchasing manager, Packard Motor Car Co., Detroit.
"A Contribution to the Training of Labor and the Personnel of a Foundry," by A. Soupart, director of musee, Professional de l'Etat et das Ecoles Techniques de Morlanwetz. Exchange paper of the Association Technique de Fonderie de Belgique.
"Heat Losses from a 75-Ton Hot Metal Car," by W. F. Roeser, bureau of standards, Washington.
"Surface Conditions of Castings as Affected by Core and Sand Mixtures," by H. I. Campbell, University of Michigan, Ann Arbor, Mich.
"Testing Molding Sands for Durability," by M. A. Blakey, International Harvester Co., Milwaukee.
"Sand Conservation and Control in a Gray Iron Jobbing Shop," by T. F. Kiley, Brown & Sharpe Mfg. Co., Providence, R. I.
"Sand Control Methods in a Light Casting Foundry," by W. G. Reichert, metallurgist, Singer Mfg. Co., Elizabethport, N. J.
"Materials Handling and Its Relationship to Building Plans," by E. F. Scott, engineer, Layout and Designs of Foundries, Austin Co., Cleveland.
"Reducing Scrap in the Malleable Foundry," by R. A. Greene, assistant manufacturing superintendent, Ohio Brass Co., Mansfield, O.

Makes New Refractory

A new zircon base refractory, for withstanding temperatures ranging up to 3300 to 3500 degrees Fahr., has been placed on the market by the Mutton Hollow Fire Brick Co., Woodbridge, N. J. It is furnished in the form of muffles, kilns, tiles and special shapes. This company also is introducing a new line of insulating refractories.

Consumers Must Select Refractories on Basis of Service Tests

THAT present laboratory tests fail to provide much worthwhile information that may be used by the consumer of firebrick, was a contention expressed at the annual convention of the refractories division of the American Ceramic society held Feb. 6-8 at Atlantic City. This subject was opened by C. P. Spangler, Jones & Laughlin Steel Corp., Pittsburgh, in one of the informal discussions. Mr. Spangler declared that laboratory methods of testing firebrick, for instance, for construction of the checker work in open-hearth regenerators, are practically worthless from the consumer's point of view.

Because of the worthlessness of cone tests as indicators of what refractories will do in actual service, said Mr. Spangler, it is necessary for the consumer to find out for himself what brick will best answer his requirements. Mr. Spangler places a few submitted brick on the bridge wall of one of the open-hearth furnaces. Through a peep-hole, these bricks are observed. If the performance in this preliminary rough treatment appears to be meritorious, several hundred of the brick are laid up in the checkers, and this service test, of course, is the real one that determines whether the brick will do.

Mr. Spangler suggested that it might be advisable to have furnace flames analyzed, with the result that it might be possible to establish typical flames. Refractories then might be studied with reference to their behavior in contact with the different flames.

F. A. Harvey, Harbison-Walker Refractories Co., Pittsburgh, who is a member of the refractories sub-committee of the American Society for Testing Materials directed attention to the fact that refractories which give satisfactory service in one plant often fail to meet the requirements in some other plant, and he said that those interested are seeking a test of the character mentioned by Mr. Spangler.

C. E. Bales, Ironton Firebrick Co., Ironton, O., and K. M. King, Ohio State university, Columbus, both expressed belief that it is unlikely that any laboratory test can be developed which will give reliable data on what refractories will do under different variations in service conditions. S. M. Phelps, Mellon Institute of Industrial Research, Pittsburgh, told of improvements in laboratory methods of testing firebrick but expressed the conclusion that it is very difficult to approximate actual service conditions.

L. C. HEWITT

Meetings of the Refractories Division of the American Ceramic society at Atlantic City last week were conducted by its chairman, L. C. Hewitt, ceramic engineer in charge of research, Laclede-Christy Clay Products Co., St. Louis. New officers elected at the business session were: Chairman, Louis J. Trostel, chief chemist, General Refractories Co., Baltimore; vice chairman, E. H. Van Schoick, Chicago Retort & Fire Brick Co., Chicago; and secretary-treasurer, C. F. Geiger, Carborundum Co., Perth Amboy, N. J.

Mr. Harvey told of several new types of brick which have been developed for checker construction. One has wedge tops in order that there will be no shelves on which dust may lodge. Another has diagonal instead of vertical openings, thus making possible a greater amount of brick work in a given space. He told of spherical brick with cylindrical holes. He also told of a recent development in which pressures are used to cause the gas to pass uniformly through the checkers so as to eliminate the tendency for a part of the checker work to do all the work while the rest is comparatively idle.

One of the outstanding papers was by A. E. R. Westman, University of Illinois, Urbana, Ill., who spoke on the relative importance of sampling and measurement in ceramic research. He said that accurate results cannot be had from a few tests. To get worth-while results in testing firebrick, he said, at least 25 bricks of a brand must be tested, while the percentage of accuracy increases as the number of samples is increased.

A review of the existing literature on the subject of laboratory slag tests for refractories was submitted by Robert F. Ferguson, Mellon Institute of Industrial Research, Pittsburgh. This review contained 53 references and is the most comprehensive treatise of this kind prepared.

A paper which brought forth considerable discussion dealt with the results of a study by Dr. H. K. Mitra, University of Pittsburgh, Pittsburgh, of the disintegration of blast furnace linings due to deposition of carbon from carbon monoxide. It was found that the catalytic agent causing this deposition is ferrous oxide. Ferric oxide and magnetic oxide, said Dr. Mitra, do not act as catalizers. Mr. Mitra proposed that the ferrous oxide in the firebrick be converted to magnetic oxide, and told how this can be done by passing hydrogen over the brick at a temperature of 500 degrees Cent. Several speakers who discussed this paper, took the attitude that this method would not be feasible in connection with the commercial manufacture of firebrick.

The phenomenon of ceramic freezing received considerable attention. Such freezing frequently occurs when heat treatment of ceramic materials is interrupted by chilling, or when the temperature is held static over too long a period. The body so chilled becomes distinctly more refractory. This phenomenon gave quite a little trouble to the Standard Pyrometric Cone Co., Columbus, O.,

about a year ago, and Gen. Edward Orton Jr., of that company, told about the investigation which was made to determine on a solution.

Dr. H. B. Henderson, Standard Pyrometric Co., also submitted a paper on the same subject, explaining how the trouble due to freezing of cones had been attacked along different lines.

Louis J. Trostel, chief chemist, General Refractories Co., Baltimore, described the laboratory which he conducts and the methods which are employed there in connection with research work, control of production, and other activities. Mr. Trostel also reported that progress has been made in the compilation of a refractories handbook and that this work should be well advanced by next year.

It was reported that mullite brick had been giving exceptional service as refractory material in electric furnace roofs and that important installations of this character are about to be made as a result of these service tests. Sandford S. Cole, Mellon institute, Pittsburgh, spoke on variations in the softening points of refractory mortars caused by the method of preparation. He reported that a study now is under way to determine the variations resulting from the different kinds of furnaces which are employed.

M. L. Bell, General Refractories Co., Baltimore, discussed the requirements of firebrick, including refractoriness, load carrying ability, resistance to fluxing and resistance to spalling. He made observations on the behavior of firebrick in service.

Steel Treaters To Hold Exhibit in West

The American Society for Steel Treating will hold its 1929 semiannual meeting in Los Angeles, May 14-18, it has just been announced by W. H. Eisenman, secretary of the society, who recently returned to Cleveland after spending several weeks on the Pacific Coast making preliminary arrangements for the organizations first national appearance in the West. The technical program will be known as the Western Metal Congress and it will be accompanied by an exhibit under the title of the Western States Metal and Machine Tool Exposition.

Twelve national societies and associations having branches in the West are arranging to participate in the program of the congress, consequently the educational feature of the meeting probably will be the most important and far-reaching ever assembled in the interest of the metals industry of the western states. Already approximately 100 eastern companies have announced their intention of taking space in the exposition. The Shrine auditorium where the exposition is to be held is comparable in size and arrangement to the Cleveland public auditorium.

The exposition will be a complete representation of the metal industry, including raw materials, machine tools, heat treating apparatus and supplies, inspection equipment, foundry supplies, materials handling machinery, welding and cutting apparatus, oil field tools, small tools, machinists' supplies and finished metal products. Floor plans and application contracts will be available from headquarters of the society, 7016 Euclid avenue, Cleveland, in April.

Move Gray Iron Research Meeting to Pittsburgh

Gray iron foundrymen of Philadelphia have agreed to send a delegation to a meeting to be held at Pittsburgh, March 13, for the purpose of discussing research and other methods of improving the gray iron castings industry. This plan supplants the original intention to hold such a meeting on that date in Philadelphia. Decision to send a delegation to Pittsburgh, said B. H. Johnson, chairman of the gray iron research committee of the Philadelphia Foundrymen's association, before a meeting of that association Feb. 8 was reached after his committee had conferred, on the day previous, with a delegation representing the gray iron foundrymen of the west.

"At the time the Philadelphia Foundrymen's association, on Jan. 16, sent out a letter inviting gray iron foundrymen of the country to send delegates to a gray iron meeting to be held here on March 13," said Mr. Johnson, "plans were actively under way for launching a similar movement in the west. As a result, Walter Seelbach, Walworth Run-Forest City Foundries, Cleveland and Dan M. Avey, editor of THE FOUNDRY, Cleveland, came here to discuss the matter with our committee.

"After going over the matter, the Philadelphia foundrymen gladly consented to abandon their plan for a meeting here on March 13, and have agreed to send their committee to attend a meeting which will be held at Pittsburgh on the same date to discuss the subject of research and other work to promote the interests of the gray iron foundries." Mr. Johnson is works manager of the Cresson-Morris Co., Philadelphia. Other members of the committee are J. A. Davies, general superintendent, Westinghouse Electric & Mfg. Co., South Philadelphia, and W. B. Coleman, of W. B. Coleman & Co., Philadelphia. These three will go to Pittsburgh for the meeting on March 13.

Mr. Johnson's report was accepted and the plan for the Pittsburgh meeting approved by the Philadelphia Foundrymen's association. Walter Wood, president of the association, announced that a discussion of developments at the Pittsburgh meeting would feature the meeting of the Philadelphia Foundrymen's association to be held March 14.

Dr. Richard Moldenke was the speaker at the meeting. He told of observations made at foundries in Germany and Sweden during his recent trip abroad, stressing particularly the quality of pig iron produced in these countries.

Equipment Producers See Better Business

At the annual meeting of the Foundry Equipment Manufacturers association, which was held in Cleveland, Feb. 7, the following officers were elected for the ensuing year: President, S. C. Vessy, W. W. Sly Mfg. Co., Cleveland; vice president, Henry W. Standart, Northern Engineering Works, Detroit. H. Cole Estep, Penton building, Cleveland, was re-elected secretary-treasurer. Mr. Standart was also elected a director for the term ending February 1931, together with A. F. Jensen, Hanna Engineering Works, Chicago. Mr. Vessy was re-elected a director.

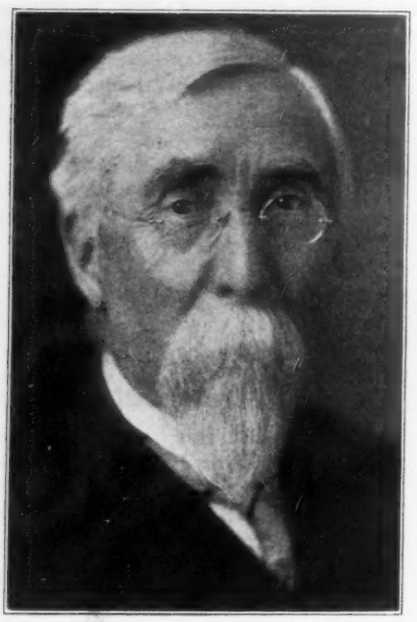
The report of the secretary-treasurer showed that the association has reached a high point in number of members and financial resources. The reports on business conditions presented at the meeting showed that somewhat better conditions have prevailed since the first of the year. It was agreed to take steps to enlarge and amplify the statistical work of the association.

The meeting was addressed by Whiting Williams, Cleveland, on the subject "What is Industry Doing to Us?" and by E. F. DuBrul, manager National Machine Tool Builders association, Cincinnati, who discussed the possibility of common action between trade associations to invoke those provisions of the Clayton act relating to unfair practices with respect to unethical buying methods.

Soviet Russia in Europe was shipped 23 bucket, chain or belt conveyors by the United States in October.

Industrial Men in the Day's News

Henry M. Leland, Pioneer Automobile Manufacturer and Prominent Industrialist



HIS eighty-fifth birthday brings to him the remembrance of many achievements and the felicitations of a host of intimate friends.

A TOOLMAKER of 65 years ago, his contributions to the early development of the American automotive industry were numerous and important.

ALTHOUGH retired from active identification with the metal-working industries, he maintains a close touch with their progress.

CELEBRATION of his eighty-fifth birthday brings to Henry Martyn Leland, pioneer automobile builder and prominent industrialist, an impressive tribute from a host of intimate friends, and a fuller recognition of the part that he has performed in the development of his country's industrial growth. A group of 85 friends, including nationally known leaders in many phases of industry, has extended 85 greetings on Mr. Leland's eighty-fifth birthday.

Starting his industrial career as an apprentice machinist in New England, Mr. Leland removed to Detroit where he was instrumental in organizing a machine tool building company bearing his name. The growth and success of this company was typical of his progressive and efficient business practices, his plants obtaining national recognition as model establishments. Entering the automotive industry when "one lungers" were regarded as queer contraptions destined to be temporary fads, Mr. Leland brought into play extensive and practical knowledge of machinery and equipment. Many changes in engineering, design and production followed, and he is regarded as being one of the prominent contributors to the development and growth of the early American automotive industry.

Mr. Leland was born in Danville, Vt., Feb. 16, 1843. Following his education in the public schools of that city he worked for a year making carriage wheels in Worcester, Mass. He entered the machinist's trade at Worcester, as an apprentice with the George Crompton Loom Works. He served as a toolmaker in the United States armory at Springfield, Mass., from 1862-5 and was for a year at Colt's armory, Hartford, Conn., and machinist and toolmaker in several Worcester shops. He entered the employ of the Brown & Sharpe Mfg. Co., Providence, R. I., in 1872 serving with that organization for 18 years, becoming superintendent of the sewing machine department. In 1890 he removed to Detroit where he became a manufacturer of special machinery, organizing the Leland & Faulconer Mfg. Co. He served as manager of that company. In 1902 he co-operated in organizing the Cadillac Automobile Co. and in 1905 these companies were merged with the Cadillac Motor Car Co., Detroit. He became identified with the automotive business against his wishes, being pressed into service as a member of the creditors' committee which took over control of the Cadillac company to protect financial interests.

Mr. Leland served as general manager of the Cadillac company until 1909, when he became president and advisory manager. One of his best known engineering accomplishments is the founding of the Lincoln Motor Co., Detroit, and the launching of the highly developed automobile which it produces. This company was formed primarily for the manufacture of airplane engines, later producing automobiles.

He has been a member of the American Iron and Steel institute, National Association of Manufacturers, National Founders' association, the National Metal Trades association and others. He makes his residence at 2984 West Grand boulevard, Detroit.

Men of Industry

Personal News of a Business Character Pertaining to the Iron and Steel and Related Fields of Enterprise

ALAN D. WOOD has been elected director and assistant treasurer of the Rainey-Wood Coke Co., New York.

Ledyard Heckscher, president and director of the Rainey-Wood company, has resigned.

* * *

Robert Elliott, for many years with

LEDYARD HECKSCHER

the Mt. Vernon Car Mfg. Co., Mt. Vernon, Ill., has been appointed assistant superintendent.

* * *

H. D. Kinnear, for many years with the Splitdorf Mfg. Co., has been made sales manager of the Gabriel Snubber Mfg. Co., Cleveland.

* * *

Ervin F. Borgwardt, erecting engineer, Harnischfeger Corp., Milwaukee, sailed Feb. 1 for an extensive tour of Central and South America.

* * *

T. M. Manley, associated with the Morse Chain Co., Ithaca, N. Y., for 20 years, has been appointed a district manager in the East, with his headquarters at the home office.

* * *

Paul B. Morgan, Morgan Construction Co., Worcester, Mass., has resigned as president of the Worcester Gas Light Co. J. I. Mange, president of the Associated Gas & Electric Co., has been elected president of the Gas Light company.

* * *

W. A. Carmer, traffic manager of the Bass Foundry & Machine Co., Fort Wayne, Ind., has been elected president of the Fort Wayne Transportation club.

* * *

L. J. Jones, vice president, secretary and director of the Eastern Rolling Mill Co., Baltimore, has resigned and will leave shortly on a Mediterranean cruise.

* * *

P. F. Gallagher, president of the Duquesne Construction Co., Pittsburgh, has been elected a director in the Associated General Contractors of America.

* * *

T. B. Cram, for over 19 years connected with the furnace industry, has become associated with Holcroft & Co., Detroit, contracting engineer, as a special representative.

* * *

John A. Ritchie, vice chairman of the Yellow Truck & Coach Mfg. Co., Chicago, has been elected chairman succeeding John Hertz, whose resignation was announced in IRON TRADE REVIEW, issue of Jan. 26.

* * *

Arthur T. Malm, of the Norton Co., Worcester, Mass., will sail for Europe, May 19, with a party from the American Ceramic society, to make an extensive study of the ceramic industry of Europe.

* * *

Don Henderson has purchased an interest in Service Bronze & Brass Works, Portland, Oreg., and has been made secretary-treasurer. He had been with the Clyde Equipment Co. for the past four years.

* * *

F. G. Dennison has been elected vice president of the Spray Engineering Co., Boston, engineer and manufacturer, succeeding J. Jarvis Preble, whose death was announced in IRON TRADE REVIEW, issue of Dec. 8.

* * *

James A. Drummond, vice president and manager of the Drummond Mfg. Co., Louisville, Ky., maker of wagon and carriage axles, has been elected president, succeeding E. M. Drummond, whose death was announced in IRON TRADE REVIEW, issue of Feb. 2.

* * *

C. W. Heppenstall, president of the Henppenstall Forge & Knife Co., Pittsburgh, celebrated his thirty-fifth year of service with that company by entertaining the officers and 100

C. W. HEPPENSTALL

veteran employes at a dinner, Feb. 11. Mr. Heppenstall began with the Trethewey Mfg. Co., now the Heppenstall company, as an office boy in 1893.

* * *

W. J. Longmore has been made consulting supervisor of purchases of the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. E. R. Norris has been appointed general works manager in charge of all manufacturing operations, C. G. Taylor as general purchasing agent, A. W. Bass as assistant to the vice president, and S. E. Marks as director of traffic.

* * *

Horace A. Frommelt has been made supervisor of apprentices for all plants of the American Steel Foundries, Chicago. He is a graduate of Champion college, Prairie du Chien, Wis., receiving his master's degree in electrical engineering at Iowa State college,

Ames, Iowa. For eight years, Mr. Frommelt was with the Falk Corp., Milwaukee.

* * *

A. N. Flora, vice president in charge of sales, Trumbull Steel Co., Warren, O., has resigned after 15 years service with the company.

* * *

A. P. Afanassieff has been appointed assistant to F. J. Baumis, president of the Shaw Crane-Putnam Machine Co. Inc., New York.

* * *

Charles Konas, engineer of the H. K. Ferguson Co., Cleveland, will sail for Japan, Feb. 17, to become assistant to W. M. Thompson, manager of the company's office in Tokio.

* * *

J. B. Green, president of the Chicago Steel & Wire Co. and its associate, the Fusion Welding Corp., both of Chicago, will take a vacation trip to Havana, Cuba, and Mexico City, Mexico.

* * *

H. M. Davison, for the past seven years general manager of sales of the Hayward Co., New York, manufacturer of buckets, derricks, etc., has left that company. His future plans have not yet been announced.

* * *

Dana Summers has been made general superintendent of the Chicago Steel & Wire Co., Chicago. Mr. Summers joins the company with 15 years' experience in the manufacture of technical wire in other plants.

* * *

Julius A. Pfeiffer, vice president of the Northwestern Expanded Metal Co., Chicago, has become director of sales of the fireproof materials division of the Milwaukee Corrugating Co., Milwaukee.

* * *

E. J. Shuler has joined the staff of engineers of the Fusion Welding Corp., Chicago. Mr. Shuler had eight years' experience in New Orleans, where he was in full charge of welding for the New Orleans Public Service Corp.

* * *

Ambrose Swasey, chairman of the board of directors of the Warner & Swasey Co., Cleveland, machine tool builder, has been appointed to the American committee to the world congress of engineers, to be held in Tokio, Japan, in November, 1929.

* * *

John C. Neale has been elected a director of the Pittsburgh Valve, Foundry & Construction Co., Pittsburgh, and is serving also as assistant to the president, succeeding J. N. Anderson Jr., who has resigned. Mr. Neale was president and general manager of the American Stainless Steel Co., Pittsburgh, and previously had been identified in executive capacities with the Midvale Steel & Ordnance Co., the Central Steel Co., construction of whose plant he supervised, and the Carnegie Steel Co.

* * *

A. E. Starbuck, formerly with the Haynes interests, Kokomo, Ind., for many years, has been elected president of the American Stainless Steel Co., with offices in the Commonwealth building, Pittsburgh, succeeding John C. Neale, who has resigned.

* * *

Frank A. Larned has been named assistant to A. J. Maloney, president of the Philadelphia & Reading Coal & Iron Co., Pottsville, Pa. He will direct the Pottsville shops, the subsidiary water companies, land and compensation departments, in all business matters independent of the mining of coal.

* * *

Herbert C. Poole, for the past three years works manager of the Colonial Steel Co., Pittsburgh, has been made assistant general sales manager in charge of the eastern district, including Philadelphia, New York and Boston. He will make his headquarters in New York. Mr. Poole has been associated with the company for 20 years.

* * *

James A. Henry has been appointed general manager of strip sheet sales, Weirton Steel Co., succeeding Joseph F. Savage, who has resigned recently. He had been assistant general manager of sales since last year and previously had been Detroit district sales manager for the Columbia Steel Co. and the Wheeling Steel Corp.

* * *

Hugh B. Wick, president of Steel & Tubes Inc., Cleveland, and with the company and its predecessor, Elyria Iron & Steel Co., for 14 years, has been made chairman of the board. Myron A. Wick, his brother, succeeds him as president. J. L. Sussman has been elected first vice president in charge of the Brooklyn plant. Lyman Bartlett has been elected a director, succeeding Harris Sussman.

* * *

Earle F. Heffley, who has been made sales manager of the Morse-Rogers Steel Co., has been with the Betz-Pierce Co., both Cleveland warehouses, and the Cambria Steel Co., later combined with the Midvale Steel & Ordnance Corp.

A. J. Decker, with the Morse-Rogers company for the last seven years, has been made assistant sales manager.

* * *

R. G. Abbey has been appointed district manager of the W. W. Sly Mfg. Co., Cleveland, with offices at 50 Church Street, New York. He will handle the complete line of blast equipment and dust arresters in the territory formerly in charge of the late D. P. Carter. In 1923, after graduating from Case School of Applied Science, as an engineer, and one year's experience with the C. G. Spring Co., of Cleveland, Mr. Abbey joined the Sly company.

* * *

Charles Henry Fowler, formerly of the Rust Engineering Co., Pittsburgh, has joined the contract department of the H. K. Ferguson Co., construction engineer, Cleveland. Mr. Fowler also has done engineering work for the Fred T. Ley Co., Springfield, Mass., and New York, and for the Pittsburgh office of the Truscon Steel Co. He is a graduate of Cornell university, Ithaca, N. Y., receiving the degree of C.E. in 1914, and is an associate member of the American Society of Civil Engineers.

* * *

S. C. Vessy, president, W. W. Sly Mfg. Co., Cleveland, maker of blast equipment and dust arresters, has been elected president of the Foundry Equipment Manufacturers' association.

Henry W. Standart, Northern Engineering Works, Detroit, was elected vice president and a director.

H. Cole Estep, vice president, Penton Publishing Co., Cleveland, has been re-elected secretary-treasurer.

A. F. Jensen, Hanna Engineering Works, Chicago, was made a director.

* * *

Louis J. Trostel, newly elected chairman of the refractories division of the American Ceramic society, was born at Galion, O., in 1893 and is a graduate of Ohio State university, Columbus, O. He went with the United States bureau of mines and the bureau of chemistry, following the war, alternating his time between Pittsburgh and Washington. These connections he left in 1923 to become chief chemist of the General Refractories Co., with laboratories in Baltimore, which position he now holds. Mr. Trostel is secretary of the committee on refractories of the American Society for Testing Materials, a member of the research advisory committee of the American Refractories institute, and is a member of the joint committee on foundry refractories of the American Foundrymen's association and the American Ceramic society.

E. H. Van Schoick, Chicago Retort & Fire Brick Co., Chicago, has been elected vice chairman for the coming year. C. F. Geiger, Carborundum Co., Perth Amboy, N. J., was elected secretary and treasurer of the refractories division.

European Prices Gain Strength

British Imports From Continental Manufacturers Diminish—Iron and Steel Demand Increases—Cammel, Laird Book 1500 Cars for Argentina—German Situation Clears Up—Italian Steelmakers Reported in New Syndicate

European Headquarters,
IRON TRADE REVIEW,
Caxton House, Westminster, S. W.1

LONDON, Feb. 14.—(*By Cable*)—Higher prices quoted by continental manufacturers of iron and steel are reducing the volume of imports from that source into Great Britain. British pig iron demand is improving, although exports from Middlesbrough in January totaled only 7087 tons, mainly to Holland, compared with 18,527 tons in December. Rail and merchant mills are fully employed, and good orders for ship plates have been placed at Middlesbrough and in Glasgow. Sheffield is buying railroad rolling stock, and orders for steel products are coming from India and South America. Cammel, Laird & Co. has obtained an order for 1500 cars for Argentina. Tin plate exports are picking up, and steel exports generally are better than in recent weeks.

Pig iron production in Great Britain in January totaled 560,500 tons, compared with 559,100 tons in December and 575,000 tons in November. The number of stacks in blast at the end of January was 148, one less than on Dec. 31. Steel output in January totaled 626,200 tons, against 604,900 tons in December and 698,700 tons in November.

Imports of iron and steel products in January amounted to 283,921 tons, compared with 280,520 tons in December, while exports of British iron and steel in January totaled 332,185 tons, against 351,795 in December.

On the Continent competition from France is subsiding owing to better domestic trade. A report from Berlin states conditions in the German iron and steel trade are generally satisfactory. It is reported that Italian steelmakers have formed a syndicate.

British Steel Meeting Better Export Demand

LONDON, Jan. 27.—(*European Staff Service*)—The report of the London Iron and Steel Exchange for the week states that overseas demand for iron and steel has improved, and competition from continental pig iron has considerably lessened. Leading merchants, on the other hand, complain that inquiry from the continent is small and little business is pasing.

For the time being continental foundry pig iron is sold at £3 2s ($15) f.o.b. Antwerp, at which price it cannot compete with Middlesbrough iron at £3 5s ($15.80).

The South African railroads have passed an order for 50 cars with the Metropolitan Carriage & Wagon Works of Birmingham, the value of the contract being £170,000 ($825,000). The North British Locomotive Co. is reported to have received an order for 39 locomotives, also from South Africa, in the face of keen continental competition of P. W. Maclellan of Glasgow has secured the contract for a bridge at Kalabagh, India, at £42,-891 ($208,000) f.o.b. British seaport. The lowest tender was that of a French works that quoted £40,000 ($194,000), but the Scotch firm had the advantage of the imperial preference of tariff, amounting to £1 2s 6d ($5.45) per ton.

The continent has sold good quantities of sheet bars to British works. There has been some reselling of steel ordered about the middle of Decem-

Current Iron and Steel Prices of Europe

Dollars at Rates of Exchange, February 13	*British* Gross Tons U. K. Ports		*French* Metric Tons Channel Ports		*Belgium and Luxemburg* Metric Tons Channel Ports		*German* Metric Tons Rotterdam or North Sea Port	
Export Prices f. o. b. Ship at Port of Dispatch—By Cable								
PIG IRON		£ s d		£ s d		£ s d		£ s d
Foundry No. 3, Silicon 2.50-3.00	$15.83	3 5 0*	$15.34	3 3 0	$15.34	3 3 0	$15.34	3 3 0
Basic	.....	.....	14.61	3 0 0	14.61	3 0 0	14.61	3 0 0
Basic-bessemer	17.05	3 10 0†	14.61	3 0 0	14.61	3 0 0	14.61	3 0 0
Hematite, Phosphorus 0.02-0.05	17.05	3 10 0	21.81	555*	.....	.....	17.05	3 10 0
SEMIFINISHED STEEL								
Billets	$28.02	5 15 0	$22.16	4 11 0	$22.16	4 11 0	$21.18	4 7 0
Wire rods	47.48	9 15 0	26.79	5 10 0	26.79	5 10 0	26.79	5 10 0
FINISHED STEEL								
Standard rails	$37.74	7 15 0	$31.05	6 7 6	$31.05	6 7 6	$31.05	6 7 6
Merchant bars	1.58c	7 5 0	1.13c	5 2 6	1.13c	5 2 6	1.08c	4 18 0
Structural shapes	1.55c	7 2 6	1.01c	4 12 0	1.01c	4 12 0	1.00c	4 7 0
Plates, ship, bridge and tank	1.71c	7 17 6	1.32c	6 0 0	1.32c	6 0 0	1.32c	6 0 0
Sheets, black, 24 gage	2.39c	11 0 0	2.26c	10 5 0	2.26c	10 5 0	2.86c	13 0 0
Sheets, galvanized, 24 gage, corrugated	2.83c	13 0 0	3.30c	15 0 0	3.25c	14 15 0	3.74c	17 0 0
Bands and strips	2.28c	10 10 0	1.37c	6 1 6	1.37c	6 1 6	1.49c	6 15 0
Plain wire, base	2.12c	9 15 0	1.54c	7 0 0	1.54c	7 0 0	1.57c	7 3 0
Galvanized wire, base	2.93c	13 10 0	1.95c	8 17 6	1.95c	8 17 6	2.01c	9 3 0
Wire nails, base	2.50c	11 10 0	1.60c	7 5 0	1.60c	7 5 0	1.67c	7 12 0
Tin plate, base box 108 pounds	$ 4.38	0 18 0	.....	.....	.....	.....	$ 6.82	1 8 0

*Francs

				Francs		Francs		Marks
Domestic Prices at Works or Furnace—Last Reported								
Foundry No. 3 Pig Iron, Silicon 2.50—3.00	$15.83	3 5 0	$16.70	435(2)	$16.40	590	$18.60	78
Basic pig iron	.....	.....	18.47	470(1)	15.21	545	20.99	88
Furnace coke	2.92	0 12 0	6.09	155	5.14	185	5.13	21.50
Billets	28.00	5 15 0	20.63	525	22.24	800	26.83	112.50
Standard rails	1.74c	8 0 0	1.36c	755	1.43c	1,100	1.51c	140
Merchant bars	1.63c	7 10 0	1.10c	610	1.14c	880	1.48c	137
Shapes	1.66c	7 12 6	1.04c	575	1.12c	865	1.45c	134
Plates, ship, bridge and tank	1.82c	8 7 6‡	1.33c	740	1.42c	1,090	1.61c	149
Sheets .black, 24 gage	2.50c	11 10 0	2.47c	1,370	2.28c	1,750	2.38c	220
Sheets, galvanized 24 gage, corrugated	2.83c	13 0 0	3.36c	1,865	3.67c	2,825	3.78c	350
Plain wire	2.12c	9 15 0	1.71c	950	1.82c	1,400	2.11c	195
Bands and Strips	2.28c	10 10 0	1.35c	750	1.50c	1,150	1.71c	158

*Middlesbrough; †Scotch foundry iron; ‡delivered; (1) Basic-bessemer; (2) Longwy. British export furnace coke £0 12s 0d ($2.92) f. o. b. Ferromanganese £20 10s 0d ($99.84) delivered Atlantic seaboard, duty paid. German ferromanganese £15 0s 0d ($73.05) f. o. b.

The equivalent prices in American currency are in dollars per ton for pig iron, coke, semi-finished steel and rails; finished steel is quoted in cents per pound and tin plate in dollars per box. British quotations are for basic open-hearth steel; French, Belgian, Luxemburg, and German are for basic-bessemer steel.

ber when a stoppage was expected in Germany. Reports from France and Belgium are that export business is fairly satisfactory. Prices remain firm on the whole and merchant bars are sold at £4 18s ($23.75) f.o.b. Antwerp. The Belgians have secured an order for 2000 tons of rails for Sweden. Far Eastern markets have been buying wire products. Belgian works also have been selling to Argentine. French competition is less keen because domestic demand has expanded since it was announced that the comptoirs for semifinished and structural steel were actually formed. German makers continue busy in the home market and find export business unattractive.

Mine Less French Ore

Paris, Jan. 25.—(*European Staff Service*)—Output of French iron ore mines in November fell short of the highest mark, reached in the previous month. Stocks at mines at the end of November were the highest figure for the year. The following table gives figures for the first eleven months of 1927, compared with the monthly averages of the three preceding years, in metric tons:

Mon. ave.	Production	Stocks at end of month
1924	2,416,000	.....
1925	2,978,400	.....
1926	3,290,000	.....
1927		
Jan.	3,799,796	1,907,518
Feb.	3,652,796	2,003,139
March	3,029,680	2,190,352
April	3,604,453	2,195,077
May	3,699,720	2,168,807
June	.....	.....
July	3,658,036	.....
August	3,902,181	2,222,422
September	3,871,219	2,300,988
October	4,036,114	2,400,861
November	3,816,070	2,473,647

Belgian Market Is Gaining Strength

BRUSSELS, Jan. 25.—(*European Staff Service*)—The Belgian iron and steel market is marked by a gradual improvement in volume of orders, and prices are stiffening. However, the outlook is clouded by uncertainty of the labor situation and the crisis in the coal mines. Iron and steel producers have turned down the demand for higher wages set forth by the workers' representatives. With regard to wages in the coal mines, the arbitration commission has not yet been able to negotiate an agreement, and it has been decided that wages shall remain at their present level until March 1. This decision is unsatisfactory to the miners, and it is feared a coal strike may be declared. The coal crisis is considered serious and is said to be due mostly to the natural location of the deposits. It is pointed out that the output per man-shift is 1140 kilos in Westphalia, 1050 kilos in Great Britain, 610 kilos in northern France, and only 520 kilos in the Belgian mines.

Franc—2.78c

Iron and steel prices are firm. Although the increases are only about 3d or 6d (6c or 12c) per ton on merchant bars, the producers will make no more concessions to merchants and exporters, and underlying conditions of the market are considered healthy. In semifinished steel transactions have been of small volume because most works are keeping out of the market. However, substantial tonnages of sheet bars and skelp have changed hands. Basic bessemer blooms are quoted at £3 18s ($18.90), 2-inch billets at £4 8s ($21.35), sheet bars at £4 8s 6d ($21.50). Merchant bars are strong, quoted at £4 17s to £4 18s ($23.50 to $23.75). In structural steel, plates and sheets there is some bargaining about prices. Beams now are quoted at £4 7s 6d ($21.20) for normal profiles and £4 8s 6d ($21.50) for British sections. Three-millimeter sheets are sold at £6 4s ($30). All these prices are f.o.b. Antwerp.

According to telephone reports at the end of the Brussels iron and steel exchange meeting, prices are still further strengthening, and the Usines de la Providence are said to have quoted £4 10s ($21.85) for British shapes.

German Labor Costs Cause Crisis

BERLIN, Jan. 25. — (*European Staff Service*)—German iron and steel industries are experiencing a difficult period of transition following the new regulations enforced by the government with regard to the 8-hour day and wages. The Stahlwerksverband or union of steelworks, explains that the modifications in the organization of the works, rendered necessary by the new regulations, have resulted in a higher increase of production costs than had been anticipated, particularly in open-hearth steelworks and rolling mills using cold raw material. It is pointed out that the relation between the production of steel and output of the rolling mills is no longer in harmony.

Merchant bars and structural steel has been increased by 3 marks (73c) per ton, and certain rebates have been discarded or reduced. The union of band and hoop manufacturers has increased the price of hot rolled hoops to 158 marks ($37.70) per ton for the districts of the Rhine, Westphalia, and practically the whole of Germany except south Germany. In south Germany the price has been fixed at 154 marks ($36.65). An extra of 10 marks ($2.38) per ton has been fixed for open-hearth steel. The price of semifinished steel has been increased by 2.50 marks per ton (60c). The wire products union has increased its prices by 5 marks ($1.20) for the whole of Germany except southern districts, for which the increase is 2.50 marks (60c). The plate union has increased its prices by 4.40 marks ($1.05) for tank plates, with an extra of 8 marks ($1.91) for open-hearth sheets. In announcing this increase the plate union stated that orders were satisfactory, both in the domestic and the foreign markets.

The association of cold rolled steel manufacturers has increased its products by 5 marks ($1.20) per ton. Steel wire has been increased by 75 pfennig (18c), and barbed wire, wire nails and springs by 1 mark (24c) per ton.

The rerolling industries, which also are grouped in a syndicate, naturally are directly affected by these increases, and the association has issued a statement emphasizing the fact that these industries were badly hit by the economic crisis of 1926, and that although sales in 1927 were considerable, prices were not satisfactory. It is further emphasized by this association that they formed an agreement with producers at the formation of the European steel entente, by which they support the policy of the entente, providing the Stahlwerksverband exerts its efforts to gradually cause the difference between export and domestic prices to disappear. It now is pointed out that for the more important categories of steel included in the entente the difference between domestic and export prices has reached twice the amount of the tariff duty on those products. At the same time the transforming industries have been obliged to face, in their own market, keen competition from Belgium and particularly from French works. The statement ends with a protest against the increase in semifinished steel and heavy steel, which increase has been applied too rapidly and in such a way as to destroy the balance of their trade.

It is reported that the Stahlwerksverband has concluded an agreement with the iron and steel merchants, which tends to render more difficult the importation of foreign iron and steel into Germany. According to this report, the syndicate would grant to merchants undertaking to sell German steel a rebate equal to the difference between the domestic price in Germany and the import price, plus the tariff, this rebate applying to semifinished steel, angles and merchant bars. For instance, the domestic price of merchant bars being 134.50 marks ($32), and the price of imported bars 98 marks at the German border, plus 4 marks freight into Westphalia, plus 25 marks duty, thus totaling 127 marks ($30.25), the rebate would be 7.50 marks ($1.73).

Here and There in Industry

Live Information Which Records the Expansion of Various Lines of Productive Enterprise

AMERICAN ELECTRIC SWITCH CORP., Minerva, O., has acquired the Nyelec Switchboard Co., New York, which will operate as the Nyelec division of the purchaser. The offices, plant and personnel at New York will be retained. The Nyelec company was organized in 1907 as the New York Electric Light & Engineering Corp. It has developed into an important builder of electric switchboards, which have been installed in many large structures in various parts of the country. Acquisition of this company's facilities completes the line of the American company.

* * *

FREEMAN BOILER & ENGINEERING CO. will remove its offices March 15 from 53 West Jackson boulevard to the Adams-Franklin building, Chicago.

* * *

WAGNER ELECTRIC CORP., St. Louis, has opened a branch sales office at 475 West Peachtree street, Atlanta, Ga., in charge of Roy F. Druschky, who has been with this company for 16 years.

* * *

ROGERS IRON WORKS CO. is the name adopted after consolidation of the Rogers Foundry & Mfg. Co., Joplin, Mo., and the Joplin plant of the United Iron Works. The company will manufacture and repair mining machinery.

* * *

F R. CROWELL CO., Hale Station, Okla., who is a manufacturer of oil well specialties, is combining several small plants in one larger plant at that point, between Tulsa and Sand Springs, Okla., on the line of the Sand Springs railroad.

* * *

WALTER ERMAN & CO. INC., McCormick building, Chicago, has changed its name to Erman-Howell & Co. Inc. The location and personnel of the company remain unchanged. It deals in iron, steel and alloy steel scrap and scrap specialties.

* * *

LOGANSPORT MACHINE CO., Logansport, Ind., has elected F. B. Wilkinson president, R. R. Johnston vice president and B. F. Long secretary-treasurer. Charles Richardson, R. J. Johnson, J. P. Henderson and S. O. Cook, with the officers, form the board of directors.

* * *

FOUNDRYMEN'S ASSOCIATION OF INDIANAPOLIS, Indianapolis, has re-elected its officers for the ensuing year. T. J. Cornwell is president, Guy E. Street vice president, James H. Hooker treasurer, and A. J. Allen secretary, the latter being elected for the twenty-fourth time.

* * *

LALLY-McKELVY INC., Pittsburgh, has been incorporated to succeed the Lally Co., specializing in tubular products, mill or warehouse shipment. The company will also handle sales in western New York, western Pennsylvania and West Virginia for the Delaware Seamless Tube Co., Auburn, Pa.

* * *

DANVILLE STRUCTURAL STEEL CO., Danville, N. Y., which was bought recently by Charles M. Schwab, has elected the following officers: President, S. A. Weymouth; vice president, J. N. Pursel; secretary and treasurer, M. E. Glover. Other members of the board of directors are E. M. Applebaugh and A. G. Dean.

* * *

GOLD MEDAL CAMP FURNITURE CO., Racine, Wis., has bought the plant and property of the R. B. Lang Mfg. Co., manufacturer of hardware specialties and steel stampings, at Racine, at assignee sale. The plant is near the buyer's plant and will be remodeled for production of metal parts. Some new equipment will be installed.

* * *

SAFE-T-STAT CO., Brooklyn, N. Y., manufacturer of thermo-electric heat indicators, has bought the W. G. Nagle Electric Co., Toledo, O., and will move its Brooklyn plant to Toledo in a short time. Royce G. Martin, president of the Safe-T-Stat company, and Victor C. Bell, vice president of A. D. Mendes & Co., bankers, have been elected directors of the Nagle company.

* * *

CHAPMAN VALVE MFG. CO., Springfield, Mass., has re-elected its officers, as follows: Adolph W. Gilbert, president; Edward A. Carter, vice president; John J. Duggan, secretary-treasurer; Edwin C. Gilbert, general manager; Philip M. Tucker, Frank A. Woods, George M. Holbrook, Emerson G. Gaylord, C. C. McElwain, A. W. Gilbert, E. C. Gilbert and Edward A. Carter, directors.

* * *

WESTINGHOUSE ELECTRIC & MFG. CO., East Pittsburgh, Pa., has taken orders recently for a 6500-horsepower reversing blooming mill motor for the Illinois Steel Co., south works, Chicago, and a 4600-horsepower motor for the Tata Iron & Steel Co., Punjab, India. The first order includes a motor-generator set and switching equipment. The motor for India will drive a 35-inch reversing roughing mill.

* * *

ACME BRASS & METAL WORKS, Waupaca, Wis., has bought by J. E. Fuller and associates, Rockford, Ill., who will make alterations and add considerable equipment. A gray iron foundry unit will be added. Patent rights to a primer for gas engines were included in the sale and this will be manufactured on a quantity basis. Specialties for the truck, tractor, automobile and implement trade will also be manufactured.

* * *

CHATTANOOGA IRON & COAL CO. plant at Chattanooga, Tenn., has been bought by F. R. Rosamond, city treasurer of Chattanooga, and E. P. Rosamond, Birmingham, Ala., a retired capitalist. No plans are announced for disposition of the property. The purchase includes 15,000 acres of coal and iron ore in the Sequatchie valley, 5000 acres of ore lands at Estelle, Ga. and a rock quarry at Flintstone, Ga. The furnace has been idle since 1919.

* * *

DAYTON PNEUMATIC TOOL CORP., Dayton, O., recently organized, succeeds the Dayton Pneumatic Tool Co. Reorganization has been effected to provide larger sales and service facilities and to produce a new line of tools. The company builds pneumatic riveting hammers, chipping hammers, sand rammers, nail drivers and similar products. L. B. George is president and treasurer, G. C. George is vice president and H. P. Williamson is secretary. A

new plant is being planned for erection later in the year.

* * *

WICO ELECTRIC CO., Springfield, Mass., has re-elected Phelps Brown treasurer and general manager and Edward L. Stoughton sales manager.

* * *

KEYSTONE FORGINGS CO., Northumberland, Pa., has elected the following officers for 1928: President, J. F. Naylor; vice president, E. G. VanAlen; treasurer, J. W. Pizer; secretary, William B. Waples.

* * *

FRED MEDART MFG. CO., St. Louis, manufacturer of steel lockers, office equipment and gymnasium supplies, is considering a merger with the Lyon Metallic Mfg. Co., Aurora, Ill., and the Durand Co., Chicago, making similar products.

* * *

WAGNER ELECTRIC CORP., St. Louis, has opened a sales office at 1006 Washington avenue, Houston, Tex. W. B. Arbuckle, for 12 years with the corporation, has been placed in charge. The new office will cover the southern part of Texas.

* * *

LUMEN BEARING CO., Buffalo, has elected officers, as follows: President, treasurer and general manager, Noah F. Young; vice president, C. H. Bierbaum; secretary, Nathanial K. B. Patch; directors, the officers and A. G. Bartholomew and Samuel Ellis.

* * *

SANYMETAL PRODUCTS CO., Cleveland, has elected R. F. Carpenter president, C. A. Krause vice president, and C. J. Daugherty secretary and treasurer. The company manufactures metal partitions and is doubling the size of its plant.

* * *

LEEDS, TOZZER & CO., 75 West street, New York, have been appointed special sales representatives for the Thew Shovel Co., Lorain, O., and the Universal Crane Co., Elyria, O., for eastern railroads of the United States.

* * *

NEW LONDON SHIP & ENGINE CO., New London, Conn., will consider a proposition Feb. 21 for a merger with the Electric Boat Co. The latter proposes purchase of the assets and consolidation by an exchange of stocks.

* * *

LLOYD FORGE CO., Annville, Pa., has elected the following officers: President, I. L. Bowman; vice president and treasurer, Philip Fernsler; secretary and general manager, Joseph F. Lloyd; directors, I. L. Bowman, William James, G. H. Light, Christian Kreider, Joseph F. Lloyd, H. W. Miller, Philip Fernsler and Jennie Williams.

* * *

WORCESTER PRESSED STEEL CO., Worcester, Mass., has elected the following officers: President and treasurer, John W. Higgins; clerk, Arthur P. Higgins; directors, the officers and Ellenton W. Ward and John N. Mowery.

* * *

STANDARD FORGINGS CO., Chicago, has re-elected officers and directors with the following changes: C. R. Lewis was made executive vice president in addition to his duties of general manager of sales. A. C. Stockton, formerly vice president and comptroller, was elected vice president, treasurer and secretary in place of L. C. Ryan, formerly treasurer, and C. I. Jernberg, formerly secretary. Both resigned to engage in other business. George I. Van Hagen was re-elected president.

* * *

W A. JONES FOUNDRY & MACHINE CO., Chicago, has elected officers, as follows: President, Warren G. Jones; vice president, George W. Page; treasurer, William F. Coleman; secretary, John A. Sizer. The officers and W. A. Jones form the board of directors. G. W. Page, elected vice president, also is director of purchases and has been with the company almost 30 years. William F. Coleman, elected treasurer, has been with the company many years and also holds the position of general superintendent.

* * *

H K. FERGUSON CO., Cleveland, announces enlargement of its offices in Japan to meet increasing demands. Charles Konas goes to Japan at once as assistant to W. M. Thompson, manager of the Tokio office. Additional space has been acquired for this office and a number of Japanese engineers and other employes added to the force. Other Ferguson men in Japan, several of whom are supervising work on the new Ford plant in Yokohama, are J. S. Ruble, vice president; W. R. Thompson, Tokio manager; T. H. Mitchell, R. W. Schlenker, H. W. Sholtz, C. W. Schroeder, C. W. Wood, J. C. Peterson, H. B. Murphy, W. A. Gleason, C. W. Alexander, J. H. Welton, D. H. Wright and J. W. Lowell.

Obituaries

EDMUND CASH PECHIN, 94, metallurgist, died at his home in Buchanan, Va., Feb. 5. He had designed cooling plates for blast furnaces, and was one of the founders of the American Institute of Mining Engineers, now the American Institute of Mining and Metallurgical Engineers. At one time Mr. Pechin was a contributor to IRON TRADE REVIEW.

* * *

Nathan T. Brenner, 64, former Chicago alderman and until recently president of the American Insulating Wire & Cable Co., died Feb. 8 at Palm Beach, Fla. Mr. Brenner had been a resident of Chicago for more than 40 years, and for 30 years was active in business.

* * *

Emanuel Watson Bloomingdale, 76, vice chairman of the New York state Bridge and Tunnel commission, died Feb. 6. at his home in New York. He was born in Rome, N. Y., and was graduated from the Columbia university law school in 1877. Mr. Bloomingdale was one of the original members of the Bridge and Tunnel commission of New York, organized in 1906. For the past seven years Mr. Bloomingdale had devoted most of his time to the construction of the recently opened Holland tunnel, under the Hudson river at New York.

* * *

John Vanes, 87, pioneer boiler and iron bridge manufacturer of Brazil, Ind., died recently. He was born in England and came to America in 1868. After working at Boston, Cincinnati, Indianapolis and Terre Haute, he settled in Brazil in 1873 and established the Vanes Boiler & Bridge Works, which he conducted until 1921.

* * *

William Charles Lawson Eglin, 58, vice president and chief engineer of the Philadelphia Electric Co., Philadelphia, died Feb. 7, at the Jefferson hospital in that city. Mr. Eglin was born in Glasgow, Scotland, and was educated in the Andersonian university of Glasgow. Coming to this country in 1888, he started to work for the Edison Electric Light Co., Philadelphia. Mr. Eglin was president of the Franklin institute, Philadelphia, at the time of his death.

Machinery

Buying Not as Active as in January, Although Inquiries Are Good—Railroad Business Still Lacking—Planer Prices Advanced

INQUIRIES for machine tools and shop equipment appear to be good, but sales are lighter than they were in January. Merganthaler Linotype Co., continues to buy and its total awards are about 300 machines. General Electric Co. is buying in substantial volume and has a good number of inquiries out. Santa Fe railroad which last week was in the market for about 20 items, has increased its list by the addition of about ten more tools and ten welding machines. Open-side planer manufacturers advanced prices 5 per cent Feb. 1, while double-housing models have been raised 10 per cent. It is said that the reported advance of 10 per cent on shapers has not been made effective. Numerous crane orders are awaiting closing, but inquiries are light.

New York, Feb. 14.—Sellers of machine tools report a better volume of general inquiry, but assert that miscellaneous buying is still of a restricted character. Mergenthaler Linotype Co., Brooklyn, continues to close on equipment, but now at a much smaller scale than in recent weeks. In addition to the vast number of miscellaneous items, including many motor drives, it appears safe to assert that this company has closed on approximately 300 machine tools. General Electric Co., Schenectady, N. Y., which has been showing increasing interest in machine tool requirements since the first of the year, is now buying in substantial volume, as well as issuing a goodly number of inquiries. Most of its recent purchases have been for Pittsfield, Mass. T. W. Warner Co., Muncie, Ind., has closed on ten lathes, to the Monarch Machine Tool Co., which has also booked, according to reports, at least two or three lathes for the Timken Roller Bearing Co., Canton, O. Crane inquiry continues brisk although buying is still sluggish.

Worcester, Mass., Feb. 14.—The machine tool market is inclined to be spotty with an absence of large lists of tools. Sales this week were confined to single units in many instances, although two or three makers report orders for group units for the machine shop and manufacturing trade. Announcement here this week that a large sum would be expended for wire drawing machinery was made. There is also inquiry in increased volume from the steel and metal trade. Small tools are fairly active, but are not moving briskly. An electrical interest is expected to be a volume buyer of tools in the near future. Textiles are still taking machinery in limited lots, but are gradually showing more interest. Grinding machinery is in satisfactory demand and parts are also fairly active.

Pittsburgh, Feb. 14.—Expected expansion in the machine tool and heavier equipment lines has not developed as yet, but the trade is hopeful that within the next few weeks, market activity will rebound. One or two sellers report on active booking of one or two tool orders from scattered buyers. A steel company here purchased a medium weight grinder last week and others are buying needed pieces of equipment. A large list is expected from the Baltimore & Ohio railroad to replace equipment lost in the Connellsville, Pa., fire, although it may decide not to rebuild the machine shops and simply maintain a maintenance division there. Westinghouse Electric & Mfg. Co., has not as yet purchased its 5-ton crane. The Koppers Co. still is negotiating as are several other companies here. The crane order of the Timken Roller Bearing Co. is up for early award.

CRANE ORDERS PLACED

Sixteen cranes, including ten 2-ton push cranes, four 2-ton hand-geared gantry cranes and two 2-ton single I-beam cranes, for Clinton Bridge Works, Clinton, Iowa, to H. D. Conkey & Co., through Page Sales Service.

Two ½-ton single I-beam push cranes for Shreveport Ice & Brewing Co., Shreveport, La., to H. D. Conkey & Co., through American Engineering Co.

Two 3-ton transfer cranes an one 3-ton electric hoist for Penn Metal Co., Parkersburg, W. Va., to Northern Engineering Works.

Among single orders were: Used locomotive crane for J. Leopold & Co., New York, to unnamed seller; 40-ton locomotive crane for Bethlehem Mines, Bethlehem, Pa., to Industrial-Brown Hoist Corp.; standard locotive crane for a Philadelphia purchaser to McMyler-Interstate Co.; truck crane for George Atwell Co., New York, to Browning Crane Corp.; coal handling equipment for Pennsylvania railroad, Philadelphia, to McMyler-Interstate Co.; 1-ton single I-beam crane for Otis Elevator Co., Yonkers, N. Y., reported placed with Shepard Electric Crane & Hoist Co.; 3-ton single I-beam handgeared crane for International Harvester Co., Chicago, to H. D. Conkey & Co., through Page Sales Service; 500-pound beam traveling wall bracket crane for Schermuly Mfg. Co., Wichita, Kans., to H. D. Conkey & Co., through Morgan Engineering Co.; 3-ton single I-beam hand-geared crane for B. B. Buffaloe & Co., Monroe, La., to H. D. Conkey & Co.; 1-ton push crane for J. J. Normoyle Co., Moline, Ill., to H. D. Conkey & Co., through Page Sales Service; ½-ton single I-beam push crane for Factory Supply Co., Birmingham, Ala., to H. D. Conkey & Co.; 8-ton underbraced foundry-type jib crane for Mundie Mfg. Co., Peru, Ill., to H. D. Conkey & Co.; 3-ton mast-type jib crane for Northern Pacific Railroad Co., Brainerd, Minn., to H. D. Conkey & Co., through Alan G. Carey & Co.; 1-ton single I-beam, 3-motor, cab-operated crane for Uxbridge Worsted Co., Uxbridge, Mass., to H. D. Conkey & Co., through Colwell & McMullin; ½-ton crane for Des Moines Steel Co., Des Moines, Iowa, to H. D Conkey & Co.

CRANE ORDERS PENDING

Two electric cranes for Southern Pacific Co., San Francisco; pending.

Monorail track, three cage-operated high-speed hoists of 2 or 3 tons capacity each and two transfer cranes for Structural Gypsum Corp., New York; pending.

Single inquiries include: 25-ton crane for F. L. Schmidt & Co., New York, for shipment to Bellingham, Wash., action expected shortly; several thousand feet of monorail track with hoists and other equipment for J. A. Zurn Mfg. Co., Erie, Pa., bids asked; crane equipment for proposed plant of Combustion Engineering Co., Greensand, N. J., reported pending.

Chicago, Feb. 14.—Good inquiry for machine tools continues, but it is indicated that sales are in slightly lighter volume than in January. Sales of used tools, however, are said to be at a record level in this district. Several dealers report sales and inquiries better than at any time in years. Fairly active industrial buying of new tools is reported, but these usually are in scattered individual orders. Santa Fe railroad, in addition to its inquiry for 20 items a week ago, has come out with an additional list. This list includes a 10-inch cold saw, two floor grinders, one ¾-inch x 8 and the other 1½ inch x 12; a 36-inch 12-foot heavy duty slab milling machine; a 100-ton, motor-driven driving box press; a single spindle motor-driven centering machine, with 5-foot bed; and a 24-inch 12-foot motor-driven heavy-duty engine lathe. This same road is inquiring also for ten arc welding machines. Sales of new tools in the Chicago district include a small planer, and a small shaper, a wall radial drill, sheet metal working machinery, and specialty tools. Two industrial concerns in Milwaukee bought several tools in this district. Manufacturers of open-side planers have advanced prices 5 per cent, effective Feb. 1, and double housing planers have been advanced 10 per cent. The reported advance of 10 per cent in the price of shapers has not been made effective. It is understood some makers of arc welders have reduced prices.

Will Build Strip Mill

Directors of Steel & Tubes, Inc., Cleveland, have authorized construction of a continuous hot strip mill to roll stock up to 14 inches wide. The new mill will adjoin the company's present hot strip division at Elyria, O. Actual construction will start in August, according to President Myron A. Wick. The company is a large producer of electrically-welded tubing with plants in Cleveland and Elyria, O., and Brooklyn, N. Y. The Elyria division is devoted to production of tie plates, light structural shapes, skelp and hot and cold rolled strip steel; its Cleveland and Brooklyn, N. Y. divisions specialize on welded tubing and conduit.

CONSTRUCTION and ENTERPRISE

Concise Timely Business Building Opportunities from Field of Industry

North Atlantic

WASHINGTON—Stone & Webster, Boston, engineers, contemplate construction of a power plant here.

BALTIMORE—Globe Iron & Metal Co. Inc. has been incorporated with $50,000 capital by Arthur Schein.

BALTIMORE—Chance Vought Corp., Border and Review avenues, Long Island City, N. Y., plans to establish a plant for the manufacture of airplanes.

AMESBURY, MASS.—Amesbury Mfg. Co. has been incorporated with $25,000 capital to manufacture mechanical devices, by Carlton E. Witha, 25 Grove street, Merrimac, Mass.

BOSTON—Joseph Sykes Bros. Inc. has been incorporated with $250,000 capital to manufacture and deal in machinery, appliances, etc., by Henry Parkman Jr., 60 State street.

BOSTON—H. R. White Co. has been incorporated with $10,000 capital to manufacture metal fireproofing materials by Ray F. Langenbach, 41 Garrison road, Brookline, Mass.

BOSTON—Snap-Hook Co. has been incorporated with $50,000 capital to manufacture snap hooks, connecting links, etc., by David Shikes, 79 Coolidge street, Brookline, Mass.

BOSTON—Mechanical Devices Inc. has been incorporated with $1,000,000 capital to manufacture nuts, bolts, screws, etc., by Watson Hartley, Hotel Touraine, Boston.

BOSTON—C. B. Die & Machine Co. has been incorporated with $20,000 capital to manufacture and deal in shoe machinery, dies and mechanical devices by J. Herbert Bentley, High street, Westwood, Mass.

CAMBRIDGE, MASS.—U. S. Neon Light & Sign Corp. has been incorporated with $50,000 in preferred shares and 500 shares no par value stock to manufacture electric signs, machinery and appliances, by Albert C. Rose, 2076 Croston avenue, New York.

HATFIELD, MASS.—Porter-McLeod Machine Tool Co. has been incorporated with $75,000 capital to operate a foundry and machine shop by Robert A. Johnson, 139 Wenonah road, Longmeadow, Mass.

LOWELL, MASS.—Lowell Machine Shop, a unit of the Saco-Lowell Shops, manufacturer of textile machinery, will be closed and production will be centered at the remaining plants at Lowell, Newton Upper Falls and Biddeford, Me.

LYNN, MASS.—R. A. Morrison Inc. has been incorporated with $50,000 capital to manufacture and deal in steel and iron products by Ralph A. Morrison, Clifton, Mass.

NEW BEDFORD, MASS.—Taunton-New Bedford Copper Co., J. H. Barrows, manager, has awarded the contract for a 2-story plant to be built on North Front street.

WORCESTER, MASS.—Worcester Wire Works Inc., 230 Ludlow street, has awarded the general contract for a 3-story 67 x 200-foot addition to Bylund Bros., Wallace avenue, Auburn, Mass.

LINDEN, N. J.—Structural Gypsum Co. has awarded structural steel for a plant addition here.

PASSAIC, N. J.—Specialty Mfg. Co. has been incorporated with $200,000 in preferred shares and 8000 shares no par value stock to manufacture machinery by Gurtman & Walker, attorneys.

PERTH AMBOY, N. J.—American Smelting & Refining Co. has awarded the contract for structural steel for its plant addition to Pittsburgh Bridge & Iron Works.

PLAINFIELD, N. J.—British-American Metals Co., South Second street and Clinton avenue, manufacturer of brass and copper tubing, plans to rebuild that portion of its plant damaged in a recent fire.

BROOKLYN, N. Y.—Decorated Metal Mfg. Co., Sackett and Henry streets, plans extensions and improvements for its 6-story plant.

BROOKLYN, N. Y.—Bergen Spring Works has been incorporated with $1000 capital to manufacture automobile accessories by E. W. Bischoff, 1504 Broadway, Manhattan, attorney.

BROOKLYN, N. Y.—Royal Electric Burglar Alarm Corp. has been incorporated with $9000 capital by F. Reiss, 11 Park place, Manhattan, attorney.

BROOKLYN, N. Y.—Hamilton Diuguid has been incorporated with $20,000 capital to engage in the iron and brass foundry business by F. J. Parks, 55 Liberty street, Manhattan, attorney.

BUFFALO—Davis Metal Tie & Rail Clamp Corp. has been incorporated with $500,000 capital to manufacture railroad ties by Gibbons & Pottle, Buffalo, attorneys.

NEW YORK—Bonoff Laundry Machinery Co. has been incorporated with $20,000 capital by M. Eisenberg, 26 Court street, attorney.

NEW YORK—K. & H. Iron Nipple Works has been incorporated with $15,000 capital by B. Hart, 38 Park row, attorney.

NEW YORK—All-Metal Partition Co. has been incorporated with $15,000 capital by B. Hart, 38 Park row, attorney.

NEW YORK—F. & L. Sewing Machine Co. has been incorporated with $50,000 capital by E. I. Herbert, 220 Broadway, attorney.

NEW YORK—How Mfg. Co. has been incorporated with $100,000 capital to manufacture

Resale Equipment News

BIDS will be received until Feb. 25 by Fred E. Hummel, receiver, Chicago, for the property and assets of the Peerless Light Co., manufacturer and distributor of lighting equipment. This includes the entire plant and equipment. The bids may be on the entire plant and contents or on separate lots. Equipment includes lathes, drill presses, punch presses, automatic lathes, threading machines, spinning lathes, automatic tapping machines, shavers, welding machines, forge, melting pots, circular saw tables, glass bending devices, compressed air pumps, sewing machines and other devices.

* * *

Sale of the equipment of the Allerding Products Co., Mansfield, O., was made Feb. 15, at bankrupt auction. The plant has been engaged in the manufacture of automotive steering wheels.

* * *

Receiver's sale of the assets of the Perfection Electric Products Co., New Washington, O., will be held Feb. 16. The company's output has been domestic electrical appliances.

Sales Calendar

Feb. 16—Auction sale of real estate, buildings, machinery and equipment of Perfection Electric Products Co., New Washington, O.

Feb. 16—Auction sale reconditioned machine tools by Henry Prentiss & Co. Inc., Jersey City, N. J.

Feb. 16—Bids of miscellaneous surplus material at Fort Ontario, N. Y.

Feb. 25—Bids received on assets of Peerless Light Co., Chicago, manufacturers of lighting equipment.

April 3—Plant and equipment of Bilton Machine & Tool Co., Bridgeport, Conn., to be sold at public auction by the receiver.

peanut roasting machines by Perkins & Butler, 38 Park row, attorneys.

NEW YORK—Coppola's Machine Tool & Die Works has been incorporated with $4000 capital by J. Komito, 153 Centre street, attorney.

NEW YORK— B. & E. Tool Machine Co. has been incorporated with $10,000 capital, to manufacture boilers by M. Rosenbluth, 180 Broadway, attorney.

NEW YORK—Squar-Meal Plate Co. has been incorporated with 200 shares no par value stock to manufacture metal and paper products, by E. H. Vredenburgh, 475 Fifth avenue, attorney.

NEW YORK—Star Fuel Saver Corp. has been incorporated with $100,000 capital to manufacture and deal in iron and steel by-products, by S. O. Kahan, 300 Madison avenue, attorney.

NEW YORK—Artcraft Wire Frame Corp. has been incorporated with $10,000 capital to manufacture and deal in lamp shade frames by S. M. and W. Frank, 225 Broadway, attorney.

NEW YORK—James M. Motley & Co. has been incorporated with $50,000 in preferred shares, 1000 shares no par value stock to manufacture and deal in machinery by F. C. McKinney, 17 John street.

NEW ROCHELLE, N. Y.—Quad Mfg. & Sales Corp. has been incorporated with 500 shares no par value stock to manufacture and deal in tools by Walradt & Blaney, 140 Nassau street, Manhattan, attorney.

YONKERS, N. Y.—Otis Elevator Co., Eleventh avenue and Twenty-sixth street, will build a 2-story plant.

CONNELLSVILLE, PA.—Fire damaged the locomotive shops and adjoining buildings of the Baltimore & Ohio railroad, Feb. 2.

LAWRENCEVILLE, PA.—Hubbard & Co. machine shop was damaged by a fire recently, with a loss to machinery and the plant.

PHILADELPHIA—American Steel Engineering Co. will build a shop and office building at the Indian Queen road and the Reading railroad. The general contract has been awarded to Frank G. English & Sons.

East Central

CHICAGO—Sterling Fixture Co., 4725 West Lake street, has been incorporated with $30,000 capital to manufacture and deal in tools, machines and mechanisms, with R. S. Brandt, 4725 West Lake street, correspondent.

CHICAGO—Whitmer & Co., 6738 South Halsted street, has been incorporated with $5000 capital to manufacture and deal in machinery and equipment with Tinsman & Blocki, 38 South Dearborn street, correspondents.

CHICAGO—Probst Column Co., 4452 Fifth avenue, has been incorporated with $25,000 capital to manufacture and deal in structural steel, with Alden, Latham & Young, 134 South La Salle street, correspondents.

CHICAGO—Winfrey Dental Supply Co., 140 North Dearborn street, has been incorporated with $15,000 capital to manufacture and deal in dental supplies, furniture and equipment with Burke, Jackson & Burke, 8 South Dearborn street, correspondents.

CHICAGO—Cast Rite Co., 2750 West Van Buren street, has been incorporated with $250,000 in preferred shares and 10,000 shares no par value stock to manufacture and deal in aluminum and other metal products, with Lamb, Foster & Pope, Monadnock block, correspondents.

CHICAGO—Anderson-Clausen Motor Co., 3040 Lawrence avenue, has been incorporated with $10,000 in preferred shares and 7000 shares no par value stock to manufacture and deal in motors, motor vehicles, etc., with Howe, Fordham & Kreamer, 7 South Dearborn street, correspondents.

ANDERSON, IND.—Delco-Remy Corp., C. E. Wilson, president and general manager, is inquiring for machinery and equipment for the manufacture of storage batteries for its proposed plant.

CLINTONVILLE, IND.—Topp-Stewart Tractor Co., manufacturer of tractors, will be taken over by an organization which plans to manufacture road building machinery here.

SOUTH BEND, IND.—Iseman Sheet Metal & Iron Co. has been incorporated with 1000 shares no par value stock to manufacture and deal in iron and steel by Karl A. Paulissen, Gayle E. Kaylor and Joseph A. Mertz.

DETROIT—F. J. Lamb Co., 6343 Wight street, F. J. Lamb, president, manufacturer of tools, is inquiring for equipment for a machine shop.

DETROIT—Advance Pattern & Products Co., 3024 West Fort street, is inquiring for machinery and equipment for the proposed addition to its machine shop.

DETROIT—Detroit Gray Iron Foundry Co., Iron and Wight streets, is inquiring for foundry equipment, etc., for its contemplated 1-story foundry, 115 x 130 feet.

GRAND RAPIDS, MICH.—Superior Foundry Corp., Wernette & McCarthy, 441 Houseman building, architects, is inquiring for iron foundry equipment including cranes, cupola, etc., for its contemplated 1-story foundry, 80 x 175 feet, for which the contract has been let. (Noted Feb. 9.)

CLEVELAND—Glenn L. Martin Co., manufacturer of airplane bombers, etc., contemplates moving its manufacturing operations to Baltimore.

COLUMBUS, O.—Ohlen-Bishop Co., manufacturer of saws, saw frames, etc., plans to rebuild its plant damaged in a recent fire.

COLUMBUS—St. Louis Cutting Die Co., 457 Ludlow street, P. Muskoff, manager, is inquiring for general equipment, including two grinding machines, three emery wheels, etc., for a branch plant.

DAYTON, O.—Precision Engineering Co. has been incorporated with 300 shares no par value stock by J. M. Dixon, J. C. Wolfe and Myron A. Seery.

LONDON, O.—Armstrong Furnace Co., M. B. Armstrong, president and general manager, is

Iron and Manganese Ores and Minerals

LAKE SUPERIOR ORES

Iron Ore

Per Gross Ton, Lower Lake Ports

Old range bessemer, 51½ per cent iron	$4.55
Mesabi bessemer, 51½ per cent iron	4.40
Old range nonbessemer, 51½ per cent iron	4.40
Mesabi nonbessemer, 51½ per cent iron	4.25

EASTERN LOCAL ORES

Cents per unit delivered at Eastern Pennsylvania and New Jersey furnaces

Foundry and basic 58 to 63 per cent	8.00 to 8.50
Copper free low phosphorus 58 to 65 per cent	nominal

FOREIGN IRON ORE

Cents per unit, alongside docks, Atlantic ports

Foreign manganiferous ore, 45 to 55 per cent iron and 6 to 8 per cent manganese	10.00 to 10.50
North African low phosphorus	nominal
Swedish foundry or basic, 65 per cent	9.00 to 9.50
Spanish and North African basic, 50 to 60 per cent	8.50 to 9.00
Newfoundland foundry, 55 per cent	9.00 to 9.50

Manganese Ore

Prices do not include duty at rate of 1 cent per pound of metallic manganese contained.

Brazilian	36 to 38 cents
Indian	36 to 38 cents
Caucasian, 53 to 55 per cent washed	38 to 40 cents

Fluorspar

85 and 5 per cent grade

Washed gravel, Kentucky and Illinois mines, per net ton	$14.50 to 14.75
Washed gravel, imported duty paid eastern tidewater, per net ton	15.50 to 16.00

inquiring for foundry equipment for the manufacture of hot air furnaces.

LORAIN, O.—National Tube Co. has started operations in its No. 2 seamless mill, converted from the old No. 3 lap mill. Construction work on another lap mill is expected to start in the spring.

WARREN, O.—Taylor-Winfield Corp., manufacturer of electric welding machines, has completed its new plant on the former site of the Winfield Mfg. Co., on East Atlantic street. An office building facing the plant will be under construction soon.

JANESVILLE, WIS.—George S. Parker Co., manufacturing fountain pens and metal magazine pencils, has deferred for the present its plan of building an addition to its plant at 219 Court street. Plans by Architect F. A. Carpenter, Brown building, Rockford, Ill., will be held in abeyance.

KENOSHA, WIS.—Work is being rushed by the MacWhyte Co., manufacturer of wire rope, cable, etc., on a plant addition. John Zoubek, 4042 Seventh street, Kenosha, is the general contractor.

KENOSHA, WIS.—Superior Metal Products Co. Inc., which recently has moved into a new plant and increased its output, has increased its capital stock from $25,000 to $25,000 preferred and 250 additional common shares of no par value.

MILWAUKEE—Atlas Engineering Co., 3038 Galena street, which recently sold its mortar and plaster mixing machine business to the Chain Belt Co., Milwaukee, has changed its name to Zimmermann Engineering Co., to continue the manufacture of other mechanical specialties. H. W. Zimmermann is president.

NEKOOSA, WIS.—Plans have been approved by the state industrial commission for a machine shop for the Nekoosa Motor & Machine Co., Michael J. Powers, manager. Architect Frank J. Henry, Wisconsin Rapids, Wis., is in charge.

RACINE, WIS.—Gedemer Tool & Machine Co., 1920 Taylor avenue, is preparing to build an addition to its plant.

RACINE, WIS.—Modine Mfg. Co., maker of automobile, truck and tractor radiators, will build plant additions. A. B. Modine is president and general manager of the company.

RACINE, WIS.—Allover Mfg. Co., manufacturer of electric hand clippers for barbershops, has awarded contracts for the reconstruction of the parts of its plant recently damaged by fire. (Noted Feb. 2.)

STOUGHTON, WIS.—Bids soon will be taken for improvements to the municipal light and power plant including installation of new generators of double unit type, switchboards, transformers and other auxiliary equipment. Power Engineering Co., 621 Metropolitan Life building, Minneapolis, is the engineer.

SUPERIOR, WIS.—United States Cast Iron Pipe & Foundry Co., Burlington, N. J., is negotiating for the purchase or leasing of the old plant in Billings Park, abandoned for 25 years, to install complete machinery and equipment for the manufacture of cast iron pipe.

WAUKESHA, WIS.—Quality Aluminum Casting Co. has awarded the general contract for a foundry addition, 39 x 200 feet, to Paul Gierke, 816 Lincoln avenue, Waukesha. The steel work has been awarded to the Lakeside Bridge & Steel Co., North Milwaukee, Wis. (Noted Jan. 12.)

Refractories

FIRE CLAY BRICK

Per 1000 f.o.b. works

First Quality	
Pennsylvania	$43.00 to 46.00
Ohio	43.00 to 46.00
Illinois	43.00 to 46.00
Kentucky	43.00 to 46.00
Missouri	43.00 to 46.00
Maryland	43.00 to 46.00
Georgia and Alabama	40.00 to 45.00
Second Quality	
Pennsylvania	35.00 to 38.00
Ohio	35.00 to 38.00
Illinois	35.00 to 38.00
Kentucky	35.00 to 38.00
Missouri	35.00 to 38.00
Maryland	35.00 to 38.00
Georgia and Alabama	30.00 to 35.00

SILICA BRICK

Pennsylvania	43.00
Joliet, Ill., and East Chicago, Ind.	52.00
Birmingham	51.00

MAGNESITE BRICK

Per Net Ton

9 x 4½ x 2½	65.00

MAGNESITE

Per Net Ton Chester, Pa. and Baltimore base	
Dead-burned grain magnesite	40.00

CHROME BRICK

Per Net Ton Chester, Pa., and Baltimore base	
9 x 4½ x 2½	45.00

Southern States

BIRMINGHAM, ALA.—Tennessee Coal, Iron & Railroad Co., plans extensions and improvements to its plant, including two new stands of finishing mills at Fairfield sheet mill and continuous reheating furnace at Fairfield structural mill.

COVINGTON, KY.—Mechanite Metal Engineering Corp. has been incorporated with $250,000 capital by A. Lee Read, 907 Chamber of Commerce, Cincinnati.

GREENSBORO, N. C.—Newman Machine Co., Jackson street, maker of woodworking machinery, plans to build a 1-story addition, 60 x 135 feet. Later it is planned to build a 1-story foundry addition.

HIGH POINT, N. C.—Industrial Electric & Machine Co. 507 East Russell street, has awarded the contract for a plant addition, 28 x 132 feet, to R. T. Cottam, Perry street.

TULSA, OKLA.—F. M. Crowell Co., manufacturer of oil field tools, is building a plant, 50 x 80 feet, on Sand Springs road.

TULSA, OKLA.—Economy Gear & Machine Works, F. H. Mathey, manager, has opened a shop at 223 West Second street, to specialize in general machine and gear work.

CLEBURNE, TEX.—Atchison, Topeka & Santa Fe railroad, 80 East Jackson boulevard, Chicago, plans to build a 1-story machine shop, 200 x 500 feet.

CORPUS CHRISTI, TEX.—Corpus Christi Boiler, Welding & Machine Works, 716 Carrizo street, has awarded the general contract for a new building, 50 x 150 feet, to E. L. Darby Construction Co., Chaddick building.

DALLAS, TEX.—Thompson Can Co. has been incorporated with $70,000 capital to manufacture tin cans, by E. Rowse Thompson. The company plans to build a new plant soon.

GALVESTON, TEX.—Texas Nail & Wire Co., Seventeenth street and Avenue A, will build a rod storage building adjacent to its plant.

HOUSTON, TEX.—Union Machine Works, L. C. Deichgraber, manager, is moving its shop to 1311 Main street where a building 35 x 70 feet has been erected. Arc welding equipment will be installed.

HOUSTON, TEX.—Houston Structural Steel Co., 3910 Washington street, has been awarded the structural steel contract for the warehouse addition of the Peden Iron & Steel Co., 700 North Jacinto street.

SAN ANGELO, TEX.—Gulf, Colorado & Santa Fe railroad, Union Depot, Galveston, Tex., plans to build a new engine house, with machine shops and repair facilities, here.

SAN ANTONIO, TEX.—Duplex Machine Co. has been incorporated with $20,000 capital by Warren W. Winkler, Builders Exchange building.

WACO, TEX.—Missouri, Kansas & Texas railroad, St. Louis, G. E. Scott, purchasing agent, is inquiring for machinery and equipment, including drill presses, forges, air hammer, etc., for its shops here.

WESLACO, TEX.—Weslaco Machine Works has been incorporated with $15,000 capital to establish a machine shop by L. L. Crosby and W. O. Simpson.

LOUISA, VA.—Gilmer Mfg. Co. has been incorporated by W. B. and B. M. Gilmer.

Western States

COMPTON, CALIF.—Alco Oil Tool Co., Avalon boulevard, has work under way on plant addition 60 x 186 feet, including a welding shop, garage, etc.

CULVER CITY, CALIF.—Metro-Goldwyn-Mayer Studios is contemplating building a 2-story machine shop, 100 x 100 feet.

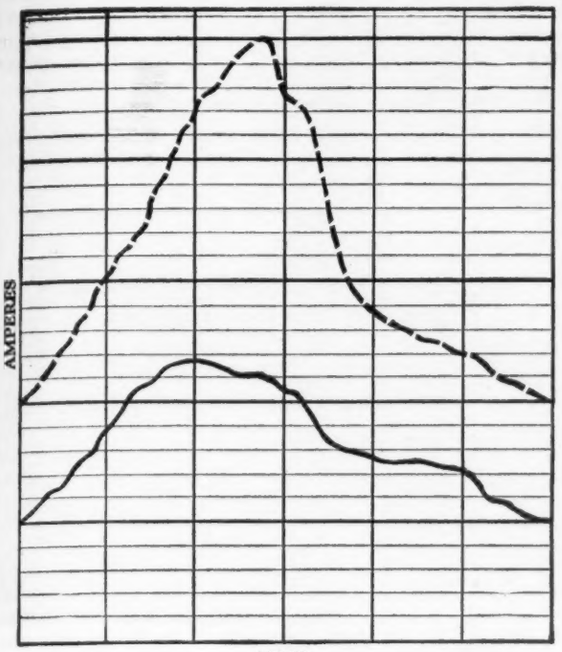
PITTSBURG, CALIF.—Columbia Steel Corp. plans to build a plant for the manufacture of wire netting and wire specialties.

SAN FRANCISCO—Pacific Can Co., Wil-

(*Concluded on Page* 492)

PEAKS!

How Much Are Your Mills Overpowered?



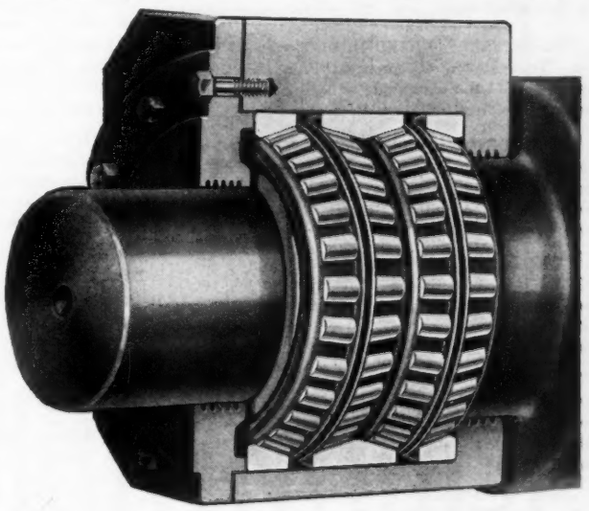
PLAIN BEARINGS —— TIMKEN BEARINGS
COMPARATIVE INITIAL PEAK VALUES

THE characteristics of rolling mills that have the greatest influence on the selection of driving motors are the high torque required at starting, and the suddenness with which heavy loads are imposed and reversed during rolling operations. As a result, starting, rolling and plugging current peaks are so high that in most cases mills have to be greatly overpowered, and truly economical operation becomes impossible.

TIMKEN TAPERED ROLLER BEARINGS applied to the mill roll necks reduce both the starting and running torque requirements to a point where peak values have a decidedly lessened effect on motor selection. Motors of lower horsepower ratings not only can be used, but can be run nearer their most efficient load points. The overall plant load curve is rendered much more even, and power conditions generally are improved, both practically and economically.

TIMKEN BEARINGS for this service, because of their tapered construction, *POSITIVELY ALIGNED ROLLS* and Timken-made electric steel, possess other operating and economic advantages. Their use means that maximum power demand conditions in the plant are improved, that overall power consumption will be lowered, and that the delays and expense of shutdowns arising from bearing trouble are greatly reduced. Furthermore, the factors that go to make up bearing maintenance are either minimized, or eliminated altogether; lubrication expense is decreased to about one tenth of its former value, and average bearing life greatly increased.

THE TIMKEN ROLLER BEARING CO., CANTON, OHIO



TIMKEN
Tapered
ROLLER BEARINGS

Construction and Enterprise

(*Concluded from Page* 490)

liams and Newhall streets, plans to build a plant 165 x 360 feet.

SOUTH SAN FRANCISCO, CALIF.—Pacific Coast Steel Co., Rialto building, San Francisco, will build a plant for the manufacture of nuts, bolts, rivets and various types of hardware.

COLORADO SPRINGS, COLO.—Alexander Industries Inc., J. Don Alexander, president, will build an airplane plant, 200 x 400 feet, and later machine shops, a boiler plant, offices and a moving picture studio will be built.

DENVER—Hall Rotary Valve Motor Co. has been incorporated with $100,000 capital by Charles W. Hall, 959 South York street, M. L. Losey and R. S. Trott.

DENVER—Fanway Safety Signal Co. has been incorporated with $100,000 capital to manufacture automotive specialties by H. W. Fehr, 815 Electric & Construction building, Frank Peterlin and G. Glenn.

DENVER—Kant Klick Valve Silencer Co. has been incorporated with $100,000 capital by C. W. Hall, 959 South York street, M. L. Losey and R. S. Trott to manufacture automotive specialties.

DENVER—United States Metals & Mining Corp., 1001 Midland Savings Bank building, has been incorporated with $100,000 capital, by R. F. Groeber, M. E. Latta and Bentley McMullin.

PUEBLO, COLO.—Pueblo Aircraft Co. has been incorporated with $150,000 capital, by Harry S. Peterson, 311 Thatcher building, to manufacture airplanes.

CUT BANK, MONT.—Glacier County Light & Power Co., Frank Seal, manager, contemplates building a power plant on Two Medicine river to supply light and power to Glacier Park, Browning and Cut Bank.

SHELBY, MONT.—Great Northern Utilities Co. will build a power plant and complete distribution system to supply light and power to Shelby, Kevin,Sunburst Oil field, etc.

New Construction and Enterprise

EUGENE, OREG.—Southern Pacific Co., 65 Market street, San Francisco, is inquiring for two large electric cranes, for its proposed 200 x 200-foot machine shop to be built here.

SEATTLE—Continental Can Co. of New York has purchased the plant of the Seattle Astoria Iron Works, 601 Myrtle street, with F. Chester Fox in charge of the local plant.

WENATCHEE, WASH.—Puget Sound Power & Light Co. will build 16 miles of transmission line.

Canada

VANCOUVER, B. C.—Baynes & Horie, 846 Howe street, have the contract for addition and alterations to plant of the Tait Pipe & Foundry Co., 4100 Nanaimo street. Building to be 1-story, 33 x 45 feet.

KITCHENER, ONT.—Dominion Truck Co., South street, is having plans prepared by B. A. Jones, 14 Ontario street, for an addition to its plant.

PORT ROBINSON, ONT.—Standard Steel Construction Co., 55 Main street east, Welland, Ont., will carry out all work by day labor in connection with addition to its plant here.

TORONTO, ONT.—Shipway Iron Co. Ltd. has been incorporated to manufacture and deal in iron, steel and other metals, with $40,000 capital by John R. Shipway, Charles B. Shields, and Roy S. McPherson.

TORONTO, ONT.—Diesel Power Ltd. has been incorporated to manufacture and deal in engines, machinery, tools and implements with $50,000 capital by George T. Scroggie, Harold W. Timmins, and Albert C. Clark.

TORONTO, ONT.—C. H. Taylor, 193 King street east, will build an addition to machine shop, 30 x 34 feet, and 12 x 30 feet, of brick construction. Machinery and tools will be required. A. Switzer, 62 Melbourne avenue, has the general contract.

TORONTO, ONT.—Canadian William A. Rogers Ltd., 570 King street west, will build addition to its factory here to be 1-story, 20 x 30 feet, brick construction. J. N. Woodin, 308 Davisville avenue, has the general contract.

New Trade Publications

MATERIAL HANDLING EQUIPMENT—Revolvator Co., Jersey City, N. J., has issued a bulletin on various uses for its portable elevators in industrial plants.

HOT OIL PUMPS—Wilson-Snyder, Pittsburgh, has issued a bulletin on its high pressure hot oil pumps in various types for cracking requirements.

INDUSTRIAL LUBRICATOR—Alemite Lubricator Co., in its current house organ, covers a variety of uses of its method of lubrication in industrial machinery. It is well illustrated.

INDUSTRIAL BUILDINGS—Truscon Steel Co., Youngstown, O., presents in a bulletin a variety of buildings made up of standardized units, providing buildings in a short time.

RECORDING WATTMETERS—The Bristol Co., Waterbury, Conn., has issued a catalog section on its recording wattmeters. It is well illustrated with halftones of the meters and charts made by them.

PUMPS—Goulds Pumps Inc., Seneca Falls, N. Y., is distributing a bulletin in which two performance stories are told to show long life and satisfactory working of the company's equipment.

SHAPERS—Cincinnati Shaper Co., Cincinnati, has issued a bulletin on recent progress in shaper design. It illustrates changes in details of these machines to give more efficient results.

COKE BY-PRODUCT EQUIPMENT—Semet-Solvay Engineering Corp., New York, has compiled and is circulating as a bulletin, an index to literature on its coke oven, by-product, water gas and gas plant equipment and processes.

CRANES—Harnischfeger Sales Corp., Milwaukee, has issued a bulletin on its cranes, going into details of every part of their construction. It is fully illustrated. A catalog has also been issued, containing 40 illustrations and plant views.

STEEL CASTINGS—In its current house organ Nugent Steel Castings Co., Chicago, calls attention to some of the discoveries it has made in seeking the cause of trouble encountered by users of castings and how the better casting has eliminated difficulties.

MULTIPLE RECORDING PYROMETERS—Brown Instrument Co., Philadelphia, describes its multiple recording pyrometer in a current bulletin. Two to 12 records may be made on one chart when conditions make this a matter of economy.

DIRECT CURRENT MOTORS—An additional catalog section has been made up by the Reliance Electric & Engineering Co., Cleveland, covering its heavy duty motors for direct current, with ball and roller bearings. It is illustrated, showing various motors and details of their construction.

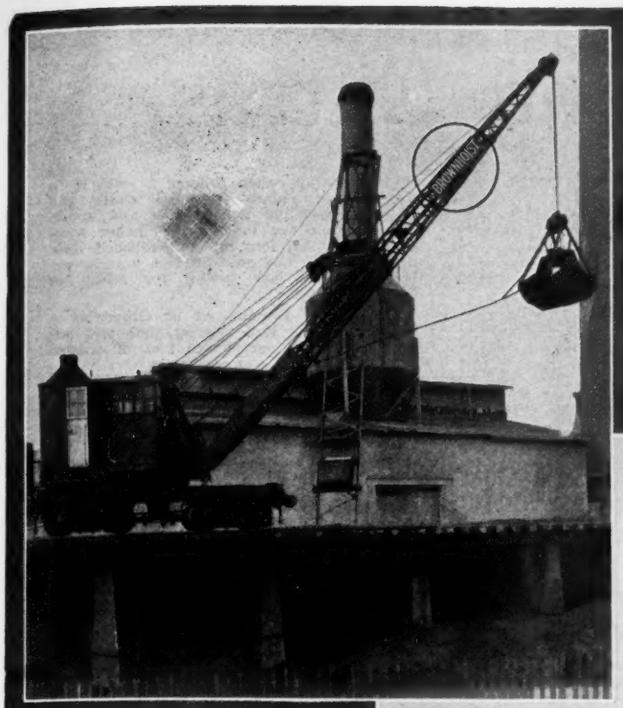
WELDED PIPING—What it describes as the modern better way for installing heating and plumbing systems is presented by the Linde Air Products Co., New York, in a new publication on welded piping. Illustrations show how welded pipe appears in actual installations and methods of welding, and the text explains advantages of eliminating screw joints.

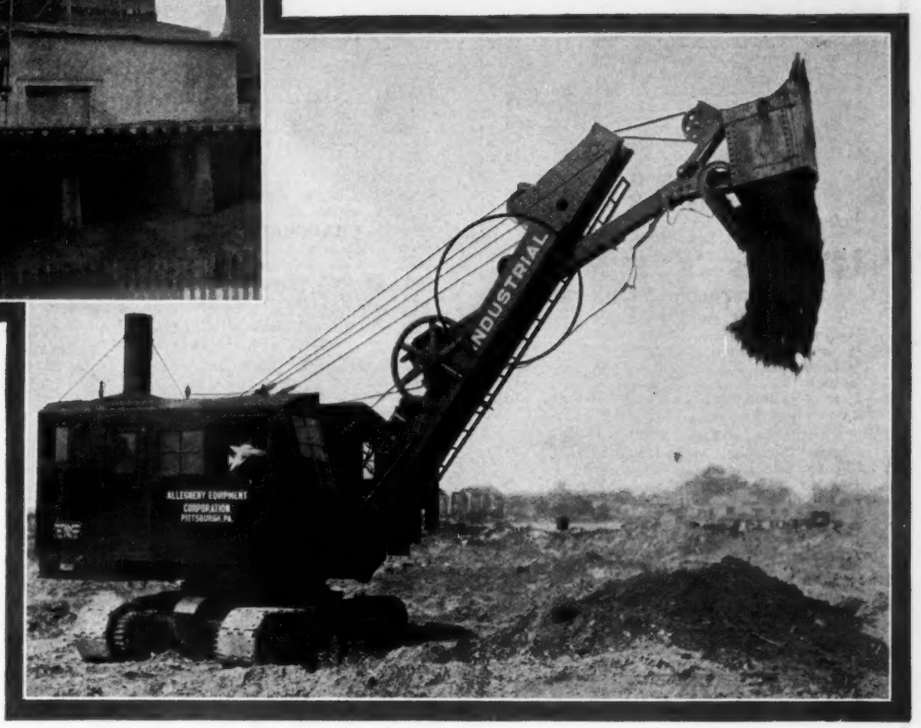
DRY QUENCHING—Dry Quenching Equipment Corp., New York, is distributing a catalog of its equipment for the dry quenching of coke, by which the sensible heat of the coke is reclaimed. By this means steam is generated by utilization of the heat formerly wasted. Illustrations show various installations where the process is used. Data give economic features and costs.

ELECTRIC FURNACES—Ajax Electrothermic Corp., Trenton, N. J., has issued a bulletin on its high frequency furnaces operating from static converters. It contains data and information not previously published. Illustrations and information are presented on its 3 kilovolt-ampere converter and photographs and cross sections of various new furnace models. A non-technical explanation of the high frequency principle is given.

ERECTING CRANES—Wellman Smith Owen Engineering Corp. Ltd., London, Eng., has issued a reprint of an article on the erecting cranes it provided for the Sydney Harbor bridge at Sydney, New South Wales, Australia. The text gives a graphic account of construction of the bridge. Illustrations show details and scale drawings make clear how the erecting cranes were designed. Peculiarities of bridge construction called for unusual design of the cranes, which was met by the company's engineers.

Dependable Trade-Marks for 50 Years





Above—Twenty-ton capacity steam locomotive crane.

At Right—Fifteen-ton capacity steam shovel crane. Also furnished with gas engine or electric power.

No company can offer you the wide choice of cranes for your work and none has had the long and valuable experience of Industrial Brownhoist in the economical handling of materials with crane equipment.

Industrial Brownhoist builds many different types of locomotive and wrecking cranes that range in capacity from 7½ to 200 tons. We also build crawler cranes and shovels, all of which types have proved their dependability in the hands of a great number of owners.

Economical handling is no problem if you have dependable equipment to do the work. Our sales engineer, who is located near you, would like to talk over your material handling methods with you. May he call?

Industrial Brownhoist Corporation

General Offices: Cleveland, Ohio.

District Offices: New York, Philadelphia, Pittsburgh, Detroit, Chicago, San Francisco, St. Louis, New Orleans, Bay City, Mich.

INDUSTRIAL BROWNHOIST

Discounts and Extras

Steel Pipe

Pittsburgh and Lorain basing discounts, jobber's carloads.

Evanston, Ill., and Indiana Harbor, Ind., take differential 2 points less discount.

Chicago takes differential 2½ points less than Pittsburgh-Lorain basis.

Butt Weld

	Black	Galvanized
⅛-inch	45	19½
¼ and ⅜-inch	51	25½
½-inch	56	42½
¾-inch	60	48½
1 to 3-inch	62	50½

Lap Weld

2-inch	55	43½
2½ to 6-inch	59	47½
7 to 8-inch	56	43½
9 and 10-inch	54	41½
11 and 12-inch	53	40½

REAMED AND DRIFTED

Butt Weld

1 to 3-inch	60	48½

Lap Weld

2-inch	53	41½
2½ to 6-inch	57	45½

EXTRA STRONG—PLAIN ENDS

Butt Weld

⅛-inch	41	24½
¼ and ⅜-inch	47	30½
½-inch	53	42½
¾-inch	58	47½
1 to 1½-inch	60	49½
2 to 3-inch	61	50½

Lap Weld

2-inch	53	42½
2½ to 4-inch	57	46½
4½ to 6-inch	56	45½
7 to 8-inch	52	39½
9 and 10-inch	45	32½
11 and 12-inch	44	31½

DOUBLE EXTRA STRONG

Butt Weld

½-inch	42	32½
¾ to 1½-inch	45	35½
2 to 2½-inch	47	37½

Lap Weld

2-inch	41	32½
2½ to 4-inch	43	34½
4½ to 6-inch	42	33½
7 to 8-inch	38	25½

(Note—Large jobbers obtain additional preferential discounts of 1 and 5 on black and 1½ and 5 on galvanized. These preferentials increased by one extra 5 per cent in meeting competition.)

Wrought Iron Pipe

Pittsburgh basing discounts, jobbers' carloads. Individual quotations made on delivered basis.

THREADS AND COUPLINGS

Butt Weld

⅛ and ⅜-inch	+11	+39
½-inch	22	2
¾-inch	28	11
1 to 1½-inch	30	13

Lap Weld

1¼ and 1½-inch	Upon application	
2-inch	23	7
2½ to 3-inch	26	11
3 to 6-inch	28	13
7 to 12-inch	26	11

PLUGGED AND REAMED

Two points less than above

EXTRA STRONG, PLAIN ENDS

⅛ and ⅜-inch	+19	+54
½-inch	21	7
¾-inch	28	12
1 to 1½-inch	30	14

Lap Weld

2-inch	28	9
2½ to 4-inch	29	15
4½ to 6-inch	28	14
7 to 8-inch	21	7
9 to 12-inch	16	2

DOUBLE EXTRA STRONG

Butt Weld

½-inch	+47½	+59⅓
¾-inch	+28	+40
1-inch	+34	+46
1¼-inch	+28	+40
1½-inch	+27	+39

Lap Weld

2 and 2½-inch	+13	+25
3 and 4-inch	+ 8	+17
4½ to 6-inch	+ 9	+18
8-inch	+12	.....

(Note—Large jobbers obtain additional preferential discounts of 1, 5 and 5 on black and 1½ and 5 on galvanized.)

Boiler Tubes

Pittsburgh carload discounts. Less carloads 4 points less

STEEL (Lap Weld)

2 and 2¼-inch	27 off
2½ and 2¾-inch	37 off
3-inch	40 off
3¼ to 3¾-inch	42½ off
4 to 13-inch	46 off

(Note—Additional discounts of 5 to 7 extra 5 per cents now being given.)

CHARCOAL IRON

1½-inch	+18
1¾-inch	+ 8
2 and 2¼-inch	2 off
2½ to 3-inch	7 off
3¼ to 4½-inch	9 off

(Note—Additional discounts of one 10 to two 10's and one 5 now being given.)

SEAMLESS COLD DRAWN

1-inch	56 off
1¼ and 1½-inch	48 off
1¾-inch	32 off
2 and 2¼-inch	27 off
2½ and 2¾-inch	35 off
3-inch	41 off
3¼ and 3½-inch	43 off
4-inch	46 off
4½, 5 and 6-inch	41 off

SEAMLESS HOT ROLLED

2 and 2½-inch	30 off
2½ and 2¾-inch	38 off
3-inch	44 off
3¼ and 3½-inch	46 off
4-inch	49 off
4½, 5 and 6-inch	44 off

(Note—Additional discounts of 2 or 3 extra 5 per cents now being given.)

SEAMLESS STEEL MERCHANT BOILER TUBES

Extras:

Add $8 per ton for more than four gages heavier than standard and add 10 per cent to theoretical weight.

Add 5 per cent for lengths over 24 feet and not over 26 feet.

Smaller tubes than 1-inch and lighter than standard gage to be sold at mechanical tubing list and discount.

Intermediate sizes and gages not listed above take price of next larger outside diameter and heavier gage.

SEAMLESS STEEL MECHANICAL TUBING

Base Discounts on New List July 1, 1925

Carbon 0.10 to 0.30 per cent.....50 to 55 off
Carbon 0.30 to 0.40 per cent.....45 to 50 off

SEAMLESS STEEL LOCOMOTIVE AND SUPERHEATER TUBES

Net prices per foot f.o.b. Pittsburgh

Outside diameter	Gage	Price
2-inch	12-gage	14¼c
2-inch	11-gage	15c
2-inch	10-gage	16c
2¼-inch	12-gage	16c
2¼-inch	11-gage	17c
2¼-inch	10-gage	18c
3-inch	7-gage	33c
5⅝-inch	9-gage	50c
5½-inch	9-gage	52c

Plus usual extras for forming and for long lengths over 18 feet and for commercially exact lengths.

Plate Extras

BASE

Rectangular plates, tank steel or conforming to manufacturers' Standard Specifications for structural steel, dated Nov. 24, 1922, or equivalent, ¼-inch thick and over on thinnest edge, (except for ¼-inch or 72 inches wide when ordered to weight in pounds per square foot—see width and gage extras), 100 inches wide and under, down to but not including 6 inches wide, 5 feet 0 inches long up to published limit in length but not over 80 feet 0 inch, are base. Extras per pound for width or diameter.

All Plates Rectangular or Otherwise

¼-inch thick and heavier, but not less than 11 pounds per square foot, if ordered to weigh—

Over 100 inches to and including 110 inches	.05c
Over 110 inches to and including 115 inches	.10c
Over 115 inches to and including 120 inches	.15c
Over 120 inches to and including 125 inches	.25c
Over 125 inches to and including 128 inches	.50c
Plates less than ¼-inch or lighter than 11 pounds per square foot. Over 72 inches to and including 84 inches	.10c
Over 84 inches to and including 96 inches	.20c
Over 96 inches to and including 100 inches	.30c
Over 100 inches add .35c to width extras for plates ¼-inch thick and heavier	

GAGE

Plates not Exceeding 72 Inches Wide

Plates less than ¼-inch gage, to and including 3/16-inch; or lighter than 10.2 pounds per square foot, to and including 7.65 pounds per square foot .20c

Plates over 72 Inches Wide

Plates less than ¼-inch gage, to and including 3/16-inch; or lighter than 11 pounds per square foot, to but not including 7.65 pounds per square foot,	.20c
Plates ordered 7.65 pounds per square foot	.30c

QUALITIES

Pressing steel	.10c
Flange steel (boiler grade)	.15c
Ordinary firebox steel	.20c
Stillbottom steel	.30c
Locomotive firebox steel	.50c
Marine steel	1.50c
Hull materials subject to U. S. Navy Dept. Specifications for Medium or Soft Steel	.10c
High tensile hull steel subject to U. S. Navy Dept. or equivalent specifications	1.00c
Boiler steel subject to U. S. Navy Dept. Specifications, classes A and B.	1.50c
Hull plates to hull specifications, required to stand cold flanging, take extra for flange steel.	

Floor Plates

Checkered plates 1.75c

Checkered plates are not furnished to sketch and are rolled from "Stock Steel" only. No physical tests will be made on checkered plates.

INSPECTION

Mill inspection .....No extra

Charles for other inspection, such as Lloyd's or American bureau of shipping, will be made by inspection bureau direct to buyer.

CUTTING

LENGTH OR DIAMETER

All Plates, Rectangular or Otherwise

Five feet and over up to published limit of length, but not over 80 feet	No extra
Under 5 feet to 3 feet inclusive	.10c
Under 3 feet to 2 feet inclusive	.25c
Under 2 feet to 1 foot inclusive	.50c
Under 1 foot	1.55c
Over 80 feet to 100 feet inclusive	.10c

Over 100 feet add .25c plus .05c for every additional 2 feet or fraction thereof.

Regular Sketches

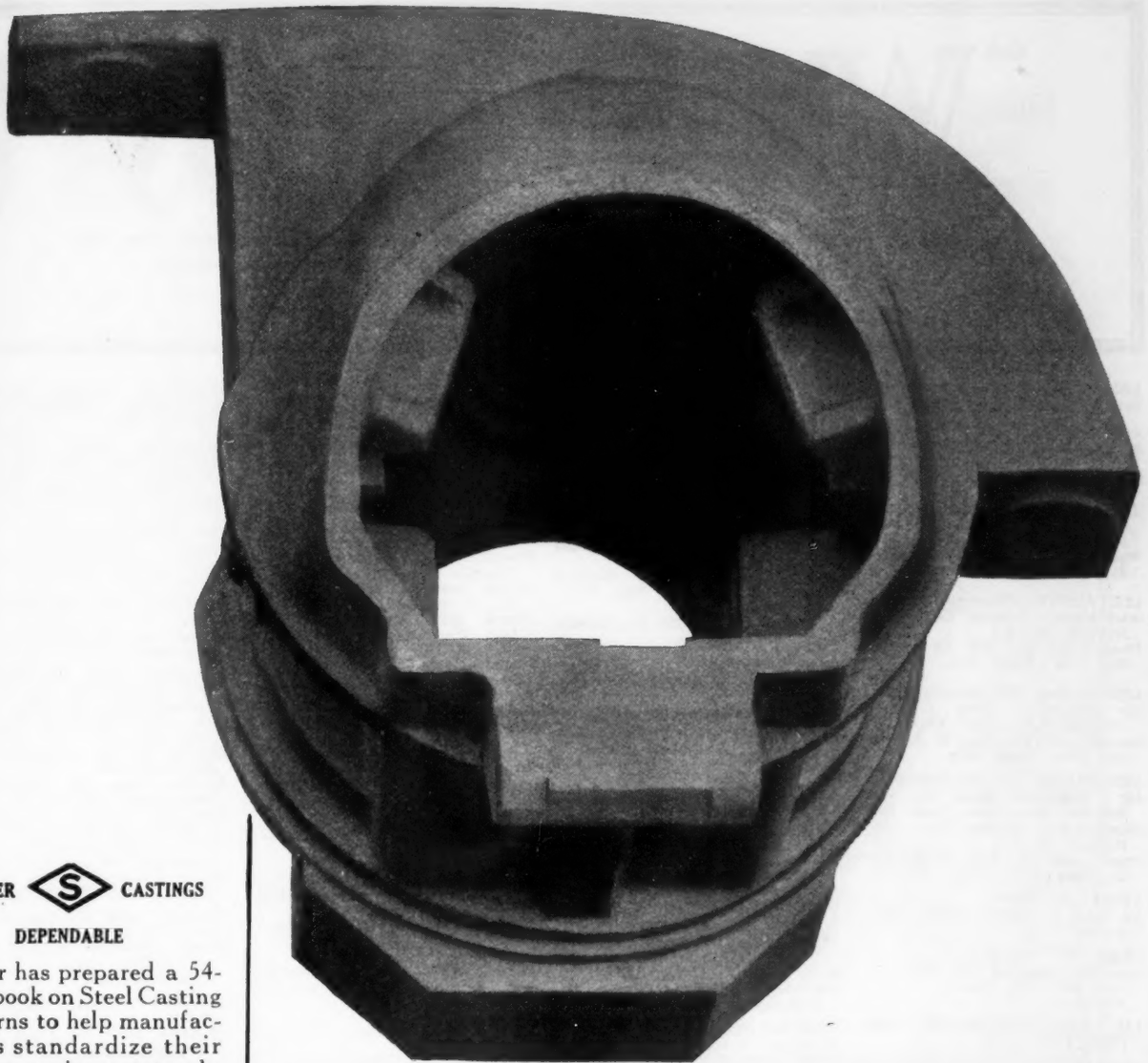
With not more than four straight cuts. (Including straight taper plates)

Additional extra ..... .10c

Irregular Sketches

With not more than four straight cuts. (Sketches cannot be sheared with re-entrant angles)

Additional extra ..... .20c



SIVYER CASTINGS

DEPENDABLE

Sivyer has prepared a 54-page book on Steel Casting Patterns to help manufacturers standardize their pattern equipment to obtain more uniform castings. It is a complete work on its subject in which you will be interested. The Sivyer Alloy book is still current. A copy of either may be had for the asking.

Close Tolerances

Sivyer foundry practice has helped many manufacturers overcome the problem of obtaining sound castings of intricate parts with unusually close tolerances.

In this case, a 40 pound journal box is cast so true to pattern that the wedges and other parts fit its inside grooves without machining. This result of Sivyer's precision methods points the way to those who want castings consistently sound and consistently true to pattern.

SIVYER STEEL

SIVYER STEEL CASTING COMPANY, MILWAUKEE

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United Engineering & Foundry Co., Farmers Bank Bldg., Pittsburgh, Pa.
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Prest-O-Lite Co., The, 30 E. 42nd St., New York City.

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American Chemical Paint Co., Ambler, Pa.

ADAMITE ROLLS
American Adamite Co., The, 12th and Etna Sts., Pittsburgh, Pa.

AIR COMPRESSORS—See COMPRESSORS (Air)

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Titanium Alloy Mfg. Co., Niagara Falls, N. Y.
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ALUMINUM (Vanadium)
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ALUMINUM
Summerill Tubing Co., Bridgeport, Pa.

ANGLES, TEES, CHANNELS—See STEEL (Structural)

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Cleveland Wire Spring Co., The, 1281 E. 38th St., Cleveland, O.

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Central Alloy Steel Corp., Massillon, O.
Donner Steel Co., Inc. P. O. Box 1000, Buffalo, N. Y.

BARS (Concrete Reinforcing)
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Donner Steel Co., Inc., P. O. Box 1000, Buffalo, N. Y.
Franklin Steel Works, Franklin, Pa.
Gulf States Steel Co., Brown-Marx Bldg., Birmingham, Ala.
Laclede Steel Co., Arcade Bldg., St. Louis, Mo.
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Central Alloy Steel Corp., Massillon, O.
Donner Steel Co., Inc., P. O. Box 1000, Buffalo, N. Y.
Franklin Steel Works, Franklin, Pa.
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Pacific Coast Steel Co., Rialto Bldg., San Francisco, Calif.
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Youngstown Sheet & Tube Co., Youngstown, O.

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Inland Steel Co., First National Bank Bldg., Chicago, Ill.
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Phoenix Iron Co., The, 20 So. 15th, Philadelphia, Pa.
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BILLETS (Re-Rolling)
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